CODE
swaraj

Field Notes from the
Standards Satyagraha

Carl Malamud
Sam Pitroda

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Preliminary Matter

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The interview with The Wire is reprinted with permission. The essay by Aaron Swartz originally appeared on his blog in 2009 and then in Laurel Ruma and Daniel Lathrop, editors, Open Government, O'Reilly Media (Sebastopol, 2011).

Code Swaraj

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Carl Malamud

Sam Pitroda

GANDHIJI
LEADER OF INDIAN AMBULANCE CORPS

CWMG, vol. 5, p. 368, Gandhi-ji, Leader of the Indian Ambulance Corps, 1906.

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CWMG, vol. 5 (1905–1906), Frontispiece, Undated.

To The Reader

Enclosed herein in these field notes is a record of our speeches and statements over the last two years. The words are, with minor corrections, the words we spoke.

This record begins with the issue that brought us together, Indian Standards. There are 19,000 such documents, all published by the Government of India. These standards comprise the technical knowledge that governs the way we keep our world safe. They are laws about safety.

Indian Standards cover so many topics important to our modern technical world: the safety of public and private buildings, the safety of pesticides, the safety of textile machines in factories, the transportation of hazardous materials, the control of adulterants in foods and spices, the methods of irrigation and flood control.

Those documents—in India, as in much of the rest of the world—were restricted in their use, and unavailable to those that needed to consult them. They were subject to copyright, sold for unreasonable sums, and tightly controlled by technical means. We bought those standards, posted them on the Internet for free and unrestricted use, and notified the Indian government by letter, then by formal petition of our actions.

When the government refused to provide updates to the standards, we brought a Public Interest Litigation suit in the Honorable High Court of Delhi in New Delhi. We committed this as an act of satyagraha, the pursuit of "soul-truth," a considered act of nonviolent resistance. We confess with no hesitation that we are disciples of Mahatma Gandhi and students of the history of the struggles for justice and democracy in India and the United States.

We committed this act to further the education of engineers in India, to keep cities safe, to inform the citizenry. We make no apologies for these actions. These documents have had millions of views. There was clearly a crying need for the dissemination of this valuable information.

We call this book "Code Swaraj" for a reason. When we say "Code" we mean more than the source code that our computers run on or the protocols that define the Internet. By Code we mean any rulebook, be it the governing protocols for the Internet or the laws and regulations that are the operating

systems of our democracies. Likewise, swaraj is the principle of self-rule, that a government is owned by the people and ruled by our common will. Code swaraj means an open rule book, a book owned by and known by the people.

Without an open rulebook, the Internet we have today would have been very different. We believe all our infrastructures should be based on open and transparent rules, ones that allow anybody to understand how the system works and how to make it better. Such a principle is a core principle of democracy, it is what we mean by democratizing information, removing barriers to entry.

We believe that in a society with true code swaraj, there is room to strive even further, to achieve aspirational goals such as universal access to all human knowledge. The Internet has taught us that an open system can grow beyond our wildest dreams. That lesson must be applied more broadly.

Gandhi's movement for freedom was not just about freedom for India, it was about instilling the principles of self-rule, democracy, and decolonization for the entire world. The principles of equal opportunity for all, of democratizing information, of trusteeship and nurturing the common good are deeply embedded in the ideas of Gandhi and those he led.

The techniques we use are inspired by those who came before us. Even if the peril that we face personally are nowhere near as dangerous, we have taken to heart the lessons of continuous struggle. The techniques and methods of satyagraha may be applied to problems both big and small, but what matters is that we all strive to make our democracies work. We own our governments in a democracy, and unless we engage in public work, unless we educate ourselves and our rulers, we will cede our position as trustees of our world.

We have included a large number of photographs in this book. This book is a mashup. This is because we are inspired by the photographs, we love looking at the old photos contained in the Collected Works of Mahatma Gandhi and in the archives of the Ministry of Information. All knowledge builds on what is already there, and we have built this book on material that is on the net for free access by all.

We also hope that you will take time to explore these wonderful resources and use the materials in your own work. Universal access to knowledge is a human right, but we must do more than just consume knowledge, we must all contribute to the common pool.

To The Reader

We are both technical people. We have worked in telecommunications and computers all our life. The Internet is a miracle that has changed the world, but it has so much more potential, and we see far too many people who are technical like us spending their days working on a new app or the pursuit of more ad clicks.

So much of the world of business focused on gaining private advantages through arbitrage and monopoly as the world becomes ever more unequal. We hope more of our colleagues will take the time to do public work and to be inspired by the ideas of Gandhi to help make our world a better place, a world focused on public good not just on private gain.

Democratizing information may seem an airy goal to some, one not worthy of pursuit by serious people in these times of trouble. A skeptical editor might well ask how we can focus on computers and networks when people are starving and our planet is destroyed?

We have two answers to that. First, computers and networks are what we do. In our world, we all do what we can. But our real answer is that access to knowledge is a building block, democratizing information is a means to an end, a foundation on which all can build.

If we put this foundation in place, we believe we can reinvent our world, as so many before us in centuries past have reinvented their worlds. We can change the deep flaws in our financial system which focuses on ever-increasing concentration of resources in the hands of a few instead of a common good. We can revolutionize how we provide health care, transportation, food, and shelter. We can revolutionize how we educate our children and ourselves. We can revolutionize how our governments work. We can begin caring for our planet. Democratizing information can change the world. Decolonizing knowledge can change the world. Let us we take that journey together.

Carl Malamud and Sam Pitroda
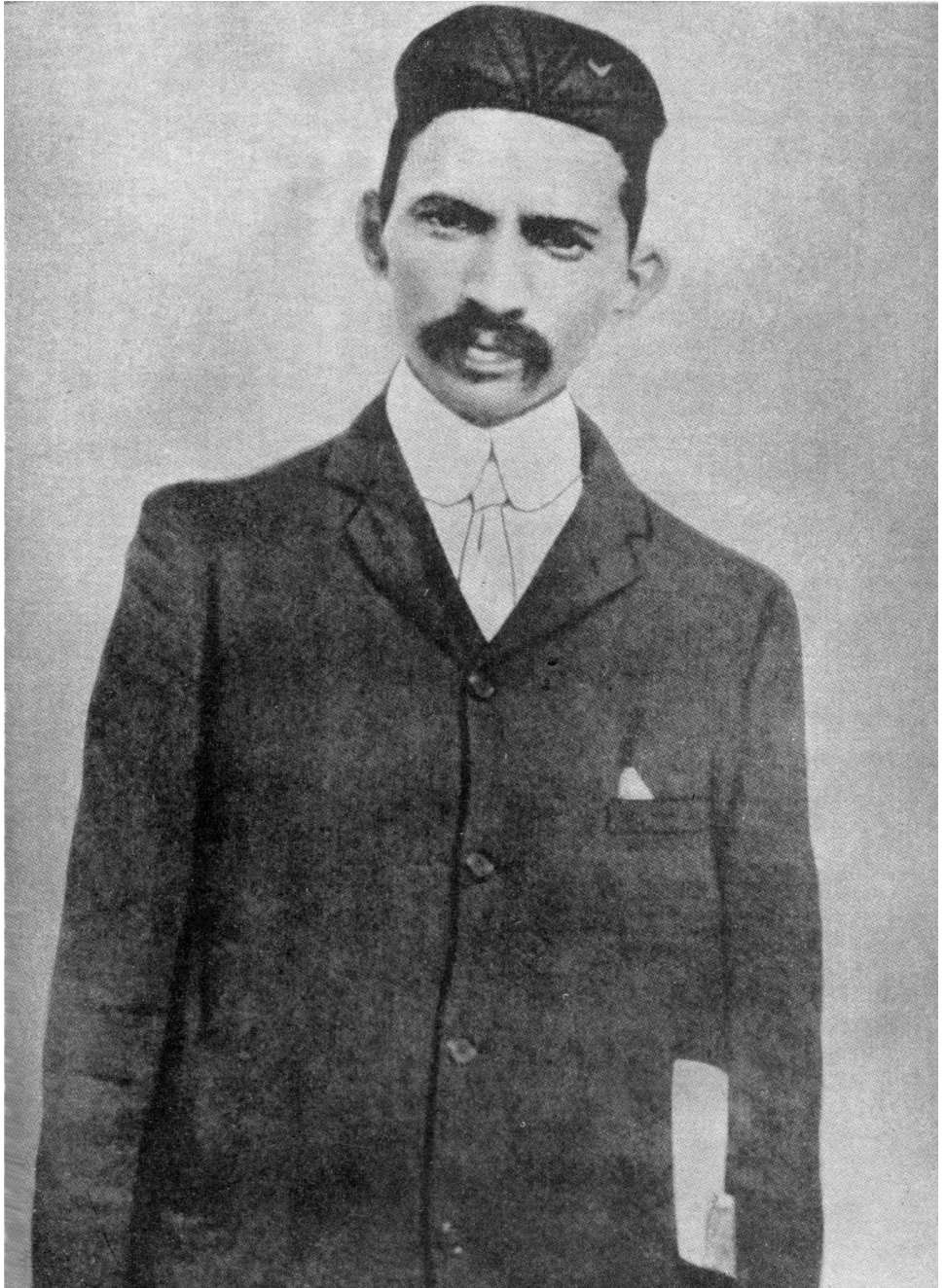
CWMG, vol. 3 (1898–1903), Frontispiece. Johannesburg in 1900.

CWMG, vol. 9 (1908–1909), Frontispiece, Gandhi-ji in London, 1909.
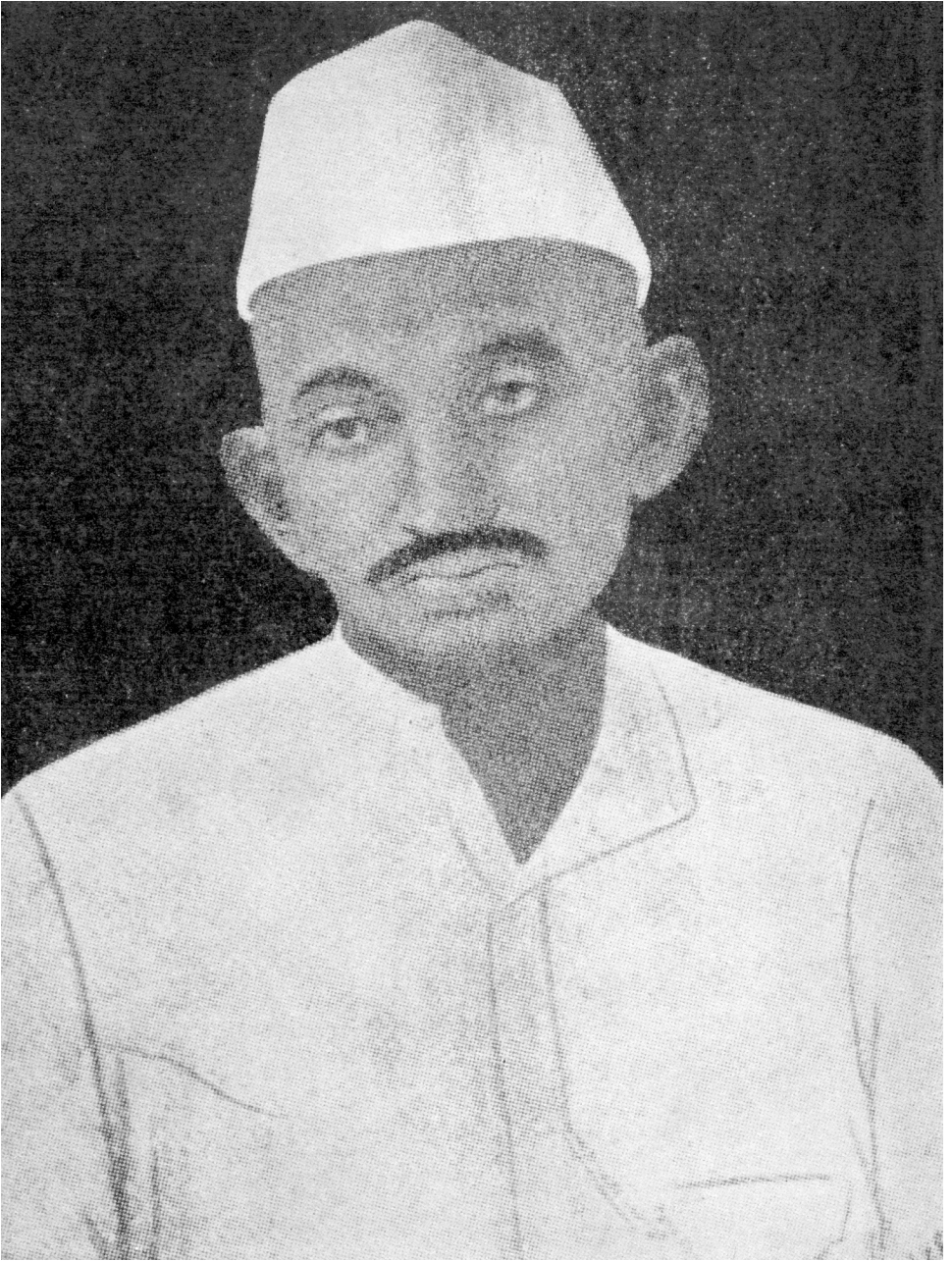
CWMG, vol. 20 (1921), Frontispiece, Gandhi-ji in 1921.

Additional Remarks Following Speech Before the Institution of Engineers (India)

Sam Pitroda, Ahmedabad, October 3, 2016

[concludes speech]

Thank you!

[applause]

I have a friend who has been working on Internet for the last 25 or 30 years. Carl was the one who built the first radio station on Internet.

[applause]

Carl also is an activist who takes government information and makes it public. Government does not want their information to become public, so Carl runs an independent nonprofit foundation.

In India, for example, just to give you an idea, there are 19,000 standards from Bureau of Indian Standards, for building, safety, children's toys, machines. These standards are published by Bureau of Indian Standards, but not available to public. You have to buy it.

We have been pushing all over the world to make standards public. We bought a set of standards in India, and Carl put it on the Internet, and government of India panicked, saying, "You can't do that, that's copyright." It's available. It is not your standard. Public has spent money, it is public standard, and public is supposed to know about it.

They don't agree. They say, "You can't do that. You have to pay." If you want to buy a building standard it is 16,000 rupees. If sitting outside of India you want to buy Indian Building Standards it is 160,000 rupees.

If I am a civil engineering student and I want to learn about building standards, I have to buy the standards from the government of India. We are saying, "No, it's public information." Carl has sued Indian government now, and there's a court case going on. We are saying, "This is everywhere, this is true

everywhere. Even in America it's true, because government does not want you to know about that stuff."

This fight goes on at all levels. We are doing it in the US, we are doing it in Europe.

[applause]

We need people like that to join in this battle for digital development. Digital development is not about hardware or software, it is also about efforts like this. Your health data, who owns your health data? It's a big issue globally. What will you do with your health data? Issues of privacy, piracy. But the main challenge is to open up the system, open government, open data, open platforms, open software.

Yesterday I spent entire day at Gandhi Ashram on Nonviolence, and Gandhi-ji would have liked open government platforms. Gandhi-ji was all about open-source software. Gandhi-ji would be tweeting today. Gandhi-ji would be on the Facebook today. Gandhi-ji would have blogged today, because it was about the media, publishing, printing, sending newspapers out.

We are saying, how can government hold onto this information? We have to fight it. Take Gandhian approach, satyagraha in digital world. Satyagraha means filing a court case, petition, explaining to government, and saying, "You are wrong, public is right. This is public information, it is not your information." This is also part of digital development. Many people understand it, believe me.

There are only a handful of people in this world who grasp this larger issue. Everybody does one little piece. We have a group of friends, I'm on the board of World Wide Web. With me on the board is the inventor of the Web, Tim Berners-Lee, so I work with him on promoting that.

Then our friend Vinton Cerf, who works with us, Vinton Cerf is the father of Internet. Tim Berners-Lee is the father of Web, Vint is the father of Internet.

You need to be with all these people. You need to work with them to be able to understand, and all of this has to be a labor of love. It is not a job. Nobody gives you a job to work with Vint Cerf. There is no government position which says, "Now you go make friends with inventor of Web," but you've got to do that. Somebody has to do it.

Institution of Engineers (India)

Carl and I spent a lot of time together. He has been with me now for six or seven days. For him, this is not a job, to file court case in India. He doesn't want to come here and fight, but this has to be done.

It has to be done in public interest. It has to be public litigation. That is what is lacking here, and we need more of those Ghandian satyagrahis in digital world, to really build Digital India. Thank you.

Carl, do you want to come here? Somebody wants to give you a little—

[applause]

I forgot, Carl also has this little package. In this disc, there are 90,000 pictures of Indian independence era.

[applause]

With Gandhi-ji, Nehru, Subhash Chandra Bose everybody. Then there are 400,000 pages of documents on Swaraj India.

[applause]

There are 19,000 Indian standards.

[applause]

In 435 gigabytes of memory. I want, Carl, to give it to them as a gift.

[applause]

[presentation of the disk drive to the Institution]

[presentation of flowers to Carl]

[Carl invited to sit on the dais with other guests of honor during remainder of Q&A]
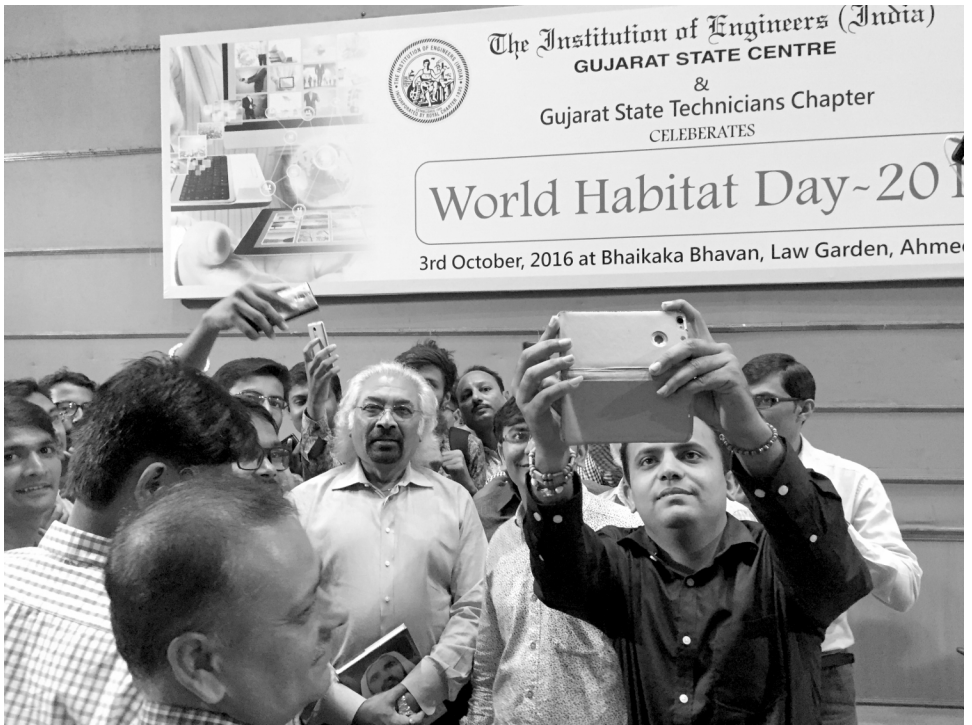
Sam Pitroda poses for pictures after Institution of Engineers Talk.

A typical post-talk scrum.
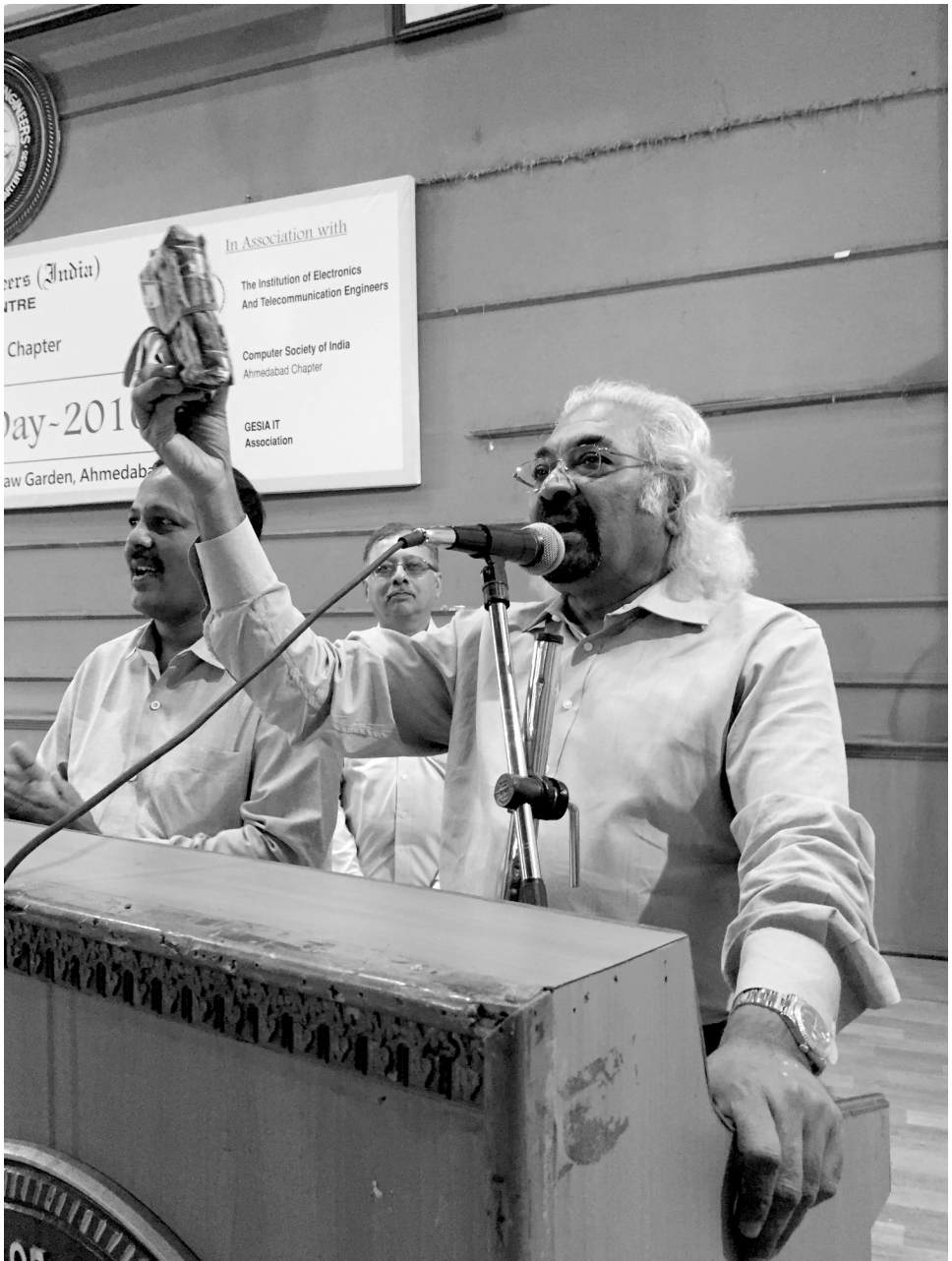
Sam holds up a terabyte disk drive containing the Hind Swaraj collection as well as 19,000 Indian Standards.

4 of the 10 Gandhi Drives Being Prepared. Each 1 Terabyte Western Digital drive includes 19,000 standards, the Collected Work of Mahatma Gandhi, 129 Air India Broadcasts, and 12,000 photographs.

Each drive is wrapped in cotton imprinted with an image of Gandhi walking, then secured in authentic red tape.

Presentation by Carl Malamud to Vice Chancellor Anamik Shah of Gujarat Vidyapith with a Gandhi Disk Drive.

Presentation to Vice Chancellor of Central University of Rajasthan.
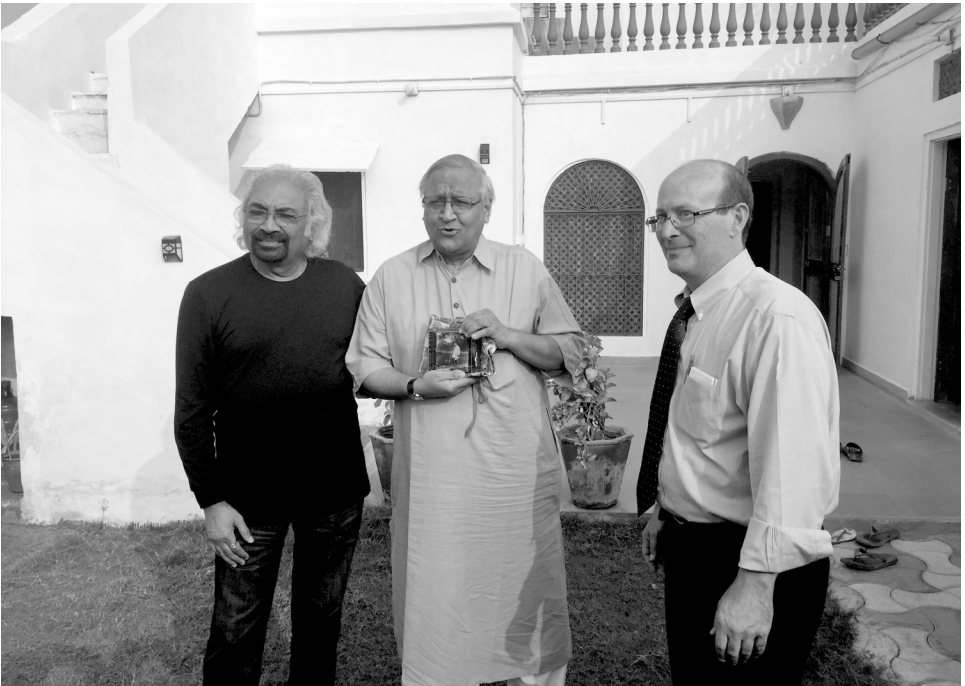
Presentation to Shri Bunker Roy, Founder of Barefoot College.

Dina Patel of the Sabarmati Ashram with a Gandhi Disk Drive.

Note on Visit to Sabarmati Ashram

Carl Malamud, October 5, 2016, Aboard Air India 173

Our car came barreling up the road towards the Sabarmati Ashram in Ahmedabad, India. The Ashram was where Gandhi lived, and it was where he embarked on his historic march to the sea, making salt in direct violation of the edicts of the Raj, the beginning of that final 18-year push that finally led to Indian homerule.

In the front seat of our car, next to the driver, was Himanshu Vyas, official spokesman for the Congress Party in Gujarat, the state where Ahmedabad is located. Next to me in the back was Dinesh Trivedi, a member of parliament and the former minister of railways. Next to him was the legendary Sam Pitroda, chief technology officer and cabinet minister under two prime ministers and the man who brought the telecommunications revolution to India by placing a phone in every village.

Security was extremely heavy at the gates to the Ashram. It was October 2, Gandhi's birthday, and a national holiday. The Governor of Gujarat and dignitaries from across the country were inside at the traditional prayer meeting held on his birthday.

As our car turned towards the gate, we were immediately surrounded by police, banging frantically on the roof of the car, yelling at us that we must turn back. Himanshu rolled down his window and shouted "Sam Pitroda! Dinesh Trivedi! Member of Parliament!"

The gate quickly swung open and our car moved rapidly through the mud parking lot and came to a stop close to the building where the prayer meeting was just letting out.

The governor's car and a dozen army vehicles stood ready at the entrance of the building to escort him out of the Ashram. We got out of our car and Sam and Dinesh were immediately mobbed by a throng of people taking selfies and old friends rushing up to say hello.

Sam and Dinesh extracted themselves from the scrum and moved quickly to greet the Governor on his way out. I stuck close to them so I would not get

waylaid by security. After paying their respects to the governor, a large crowd formed around Sam and Dinesh taking pictures and shouting greetings.

The reason we were at the Ashram on this auspicious day, and the reason Sam had brought me to India, was to attend a workshop entitled "Gandhi, Dialogue on Violence." Sam had called me late in the evening two months prior, sounding agitated and distraught. He talked to me about the latest spate of bombings by terrorists, about attack by states on their people, about the violence of people against each other. "We must do something," he said. He had decided to organize this workshop at the Ashram and wanted to know if I would come to India with him.

Sam explained he wanted this to be more than simple talking, more than the usual bemoaning the state of our world. He wanted this workshop to be the beginning of a movement for peace, a movement that used the techniques and teachings of Gandhi to do something about what was so wrong with our modern world.

When Sam asks me to do something, I, of course, say yes. The next day, Sam started making calls to the Ashram to see if they would host us and to others asking them if they would join us. I started working on my visa application.

...

While Sam and Dinesh greeted their throngs of admirers, I looked around at the scene. The Ashram was full with hundreds of schoolchildren gathered in groups walking around the buildings. Musicians were set up outside one of the buildings, playing traditional bhajans (prayer songs), especially those that Gandhi-ji was known to favor. Students were sitting on the ground spinning thread. A huge group of visitors were gathered outside of Gandhi's residence to pay homage.

While I was standing there, a tall young man in a red shirt approached me and introduced himself. This was Srinivas Kodali, whom I had never met in person but had been working closely with over the net for several years. Srinivas is a young transportation engineer who had joined me as a co-plaintiff in suing the government of India. I welcomed him warmly, and warned him to stay close to me so he wouldn't get lost.

Sam extricated himself from the crowd, grabbed Dinesh by the elbow and shouted to me "Let's Go!" With Srinivas Kodali in tow, we headed across the

Note on Visit to Sabarmati Ashram

Ashram, past Gandhi's house and the Ashram bookstore, and across the street where a breakfast of idlis and upmas was being served.

After breakfast, we found our way into an administration building where we would hold our workshop. The floor was set out with mats and there was a balcony crowded with students and guests there to observe the proceedings. Sam plopped himself on the floor near the center of the room. Dinesh and I installed ourselves on either side of him. The space was small, crowded with several dozen participants.

Right across from me was our host, Kartikeya Sarabhai, a noted environmentalist and the son of the creator of India's space program. Kartikeya-ji, one of the Ashram's trustees, was our host for the day. As I looked around the floor, I saw an intimidating array of distinguished Gandhi scholars, activists, and historians.

Across the floor, dressed in traditional homespun white khadi was Amrut Modi, who has lived at the Ashram since 1955 and used to accompany Vinod Bhava on his walks throughout India. Next to him was the famed Ela Bhatt, who founded the Self-Employed Women's Association of India in 1972 and joined Desmond Tutu and others as a member of the Elders.

Sitting next to Ela-ji was Dina Patel, whose father spent 40 years helping to compile the 100-volume, 56,000 page Collected Works of Mahatma Gandhi. For the last seven years, Dina had labored to create an electronic version of the Collected Works, painstakingly and precisely fixing all errors in the optical character recognition (OCR) and the original volumes, creating a sterling edition of the Mahatma's words.

Dina is one of the world's leading experts on Gandhi, having labored over all his writings for so long, literally reading every word of the Collected Works. I had met her in Delhi a few days earlier, and she had amazed me with story after story of his life and suggestions for books to read that I had not yet come across. Dina is a walking encyclopedia of Gandhi and she tells her stories with passion and charm.

A smaller group had met the day before at the Ashram to kick off the conversation while Sam and I were still down in Rajasthan, where Sam had presided over the convocation ceremonies at the Central University of Rajasthan where he is the chancellor. Karikeya-ji began the morning by summarizing the previous days discussion on violence in our world.

Our basic charge was to discuss the root of violence in our world, to ask what we might learn from Gandhi's teachings, and to examine next steps that perhaps might be taken to build a movement that would strive to take action. We were not there to solve the endemic of violence in a single day, we were there to consider what we might do over a long period of time as individuals and whether we could draw together as a community to amplify our voices.

I was nervous. Since Sam had called me late that Sunday night, I had been obsessing over this weighty question, an inquiry far from my daily work of copying government information from one disk drive to another. While I had certainly gone on at length over the years on topics such as the rule of law, broader issues such as world peace, stopping violence, and the teachings of Gandhi were far out of my comfort zone. I had no pat answers or obvious insights.

Karikeya-ji's summary of the previous day came down to three points. First, we must learn to tolerate and indeed encourage diversity. Second, we must learn to tolerate and indeed encourage dissent. Third, if we wished to have an impact, we must understand the necessity of fearlessness. All three of these traits are core to Gandhi's teachings.

Sam Pitroda then kicked off our discussion for the day and explained why he had called us together. I had heard many of these themes over the last few months as he discussed a book he was working on and as I listened to him speak. That we must redesign our world is Sam's thesis. The last time the world did this was after World War II with the creation of the United Nations, the International Monetary Fund, and the other institutions we know today. That world was based on a few rich and powerful countries and a "third world" of colonies and poverty-stricken, non-democratic poor countries, at least in the estimation of the architects of this system.

But, what Keynes, Marshall, and all the others did not consider was Gandhi. Gandhi's efforts did not just lead to the independence of India, it had spread as a global anti-colonization movement.

Today, there is no Soviet Union. The European Union has lost Great Britain. India and China have been developing at record rates. Yet, despite that, our world is not working. It is broken, Sam says, because it was designed for a different time, a different world.

Note on Visit to Sabarmati Ashram

India produces a surplus of food, yet a vast population still starves. Throughout the world, income inequality has increased greatly instead of narrowing. Disease, inadequate water, and poverty afflict far too much of the world.

And then there is the violence. The violence of the state against other states and against it's own peoples. The shocking violence of terrorism, of community against community. The individual violence of rape, murder, and abuse.

Sam is a technology optimist. He believes we have an unparalleled opportunity in our modern times. We can cure disease. We can have clean water. We can make the Internet high speed and universal, we can make it free. We can address global warming.

But, to do any of these things, we must redesign our system of governance, how we run our world. Sam often says we must not focus exclusively on human rights, we must add a focus on human needs.

When Sam finished, Dinish Trivedi spoke. A long-term member of parliament and an intensely spiritual and religious person, Sam and I had been staying at his house in Delhi, and I had come to admire him deeply.

Dinesh said one of the key problems in our modern world was communities blindly hating other communities. This depersonalized the hatred, allowing individuals to believe they had no responsibility to decide because hatred was the consensus, the way it was done. It depersonalized the victims of violence, they were no longer individual human beings, they were simply the hated others.

This violence often stems from nationalist or ethnic differences, but all too often it comes from religion. Dinesh said we must look into ourselves, that what the world needs is not a focus on religion, but a focus on spirituality. It is up to us to change ourselves, only then will the others change.

Dina Patel then spoke. She said the way you stop violence is you stop it yourself. She told the story of a young man who was drafted during the Vietnam war. He wrote to Einstein and asked him what to do. Einstein wrote back with a simple reply: "Do like Gandhi."

The boy was puzzled, and wrote back to Einstein and asked him what that meant. Einstein replied, "disobey the law." That boy went to jail for three years.

That boy was Gene Sharp, one of the leading apostles of non-violence, whose work has influenced peaceful revolutions throughout the world.

The conversation then moved along at a dizzying pace. I took some notes, took some pictures, and tried to tweet some of the more concise points to allow people around the world to get a sense of the proceedings. I also worried about what I would say, scrawling additions to my handwritten page of notes, taking solace in seeing distinguished historians whose books I greatly admired nervously doing the same.

Sushma Iyengar, who created a dynamic organization in Gujarat state to help rural women become self-dependent, spoke of violence against women, how all too often we legitimize violence by remaining silent. She said we have to create a hierarchy of causes, where some forms of violence have become more important than others. We all too often legitimize sexual harassment and even rape, but if the woman responds and resists, we delegitimize and criminalize that response.

Gandhi has always been critical of violence as a response to violence. Despite the overwhelming cruelty and oppression of the British Raj, a structural form of violence of the state against his people, he was still critical of the 1857 mutiny. When people started killing each other after the Great Calcutta Killings and in the 1946 Bihar riots, Gandhi fasted until they stopped, a fast he was prepared to take to his death if they did not.

Anil Naurtiya, the author of a fascinating book on "The African Element in Gandhi," spoke about this structural form of violence in the context of South Africa, the system of apartheid, a cruel violence against an entire race, and the decisions of leaders such as Mandela to meet force with force. Mandela, of course, was a disciple of Gandhi as were many other leaders in Africa.

A continual debate Gandhi had with his followers was whether, in the face of unbending intransigence, some violence was necessary. Nelson Mandela wrote that as he studied the words of Gandhi, he came to the conclusion that while they must do more than simple protest, they should choose a different kind of violence, opting for sabotage in order to minimize loss of life.

Ela Bhatt, the creator of the Self-Employed Women's Association, an association of 1.3 million women, spoke next. She said that peace is an aspirational goal. It does not matter if we have ever achieved it or ever will, we must strive for it because the darkness does not bear repeating.

Note on Visit to Sabarmati Ashram

Ela then echoed not only Gandhi but King, saying that the crux of non-violence is not the absence of violence, it is the presence of love. King often riffed on this theme in his sermons and speeches, saying that "hate cannot drive out hate, only love can do that." A spate of comments followed Ela's, she has always made people think, and the sense of the room was that the roots of violence were structural, this went beyond bombs and guns to the very structure of our societies.

Next up was Anamik Shah, the Vice Chancellor of Gujarat Vidyapith, known as "Gandhi University" after he founded the institution in 1920. The university attempts to inject Gandhian values in all the coursework, students are required to learn to spin thread and perform manual labor as a regular part of their schooling.

Professor Shah spoke of the violence of health care, of people dying because they could not pay for the drugs they needed. He spoke about how this had its roots in an economic violence in which human needs were sacrificed in a world of every-widening economic disparity.

Anamik-ji gave an example of how a government had addressed the violence of health by redesigning a fundamental aspect of how a people govern themselves, in this case by redefining property. In Japan, the patent system has been modified so patents are no longer effective for noncommercial uses related to health. This means if a government, or a foundation, manufactures a drug to give away to people, they can do so.

I had never heard of this compulsory availability of knowledge despite my long-standing study of patents in the U.S., and I found this concept very exciting. All day, these kinds of insights kept coming at me. One after another, people stepped up with carefully considered historical stories, insights into Gandhi's philosophy, and an application of those lesson to our modern world.

Professor Sudhir Chandra, one of the foremost historians of Gandhi, summed up our challenge succinctly, giving the example of how the City of Delhi was embarking on a trend of taking streets named after historical events and people and renaming them after current events. Professor Chandra called this trend "the society for the preservation of the present." He said we must not treat history like a primary school student would treat a slate, wiping it clean after the day's exercises. We must live our history and learn from it.

...

After a delightful lunch of pooris with curries, dhokla, and butter milk in a nearby canteen, we returned to the Ashram. I was asked to make a few comments, and I gathered my courage. Nothing was recorded and all I had left the next day were two pages of hand-scrawled notes, but I attempt here on my 17-hour flight home to reconstruct my effort to connect violence in our world to the concept of the rule of law.

In 1963, John F. Kennedy was addressing a group of Latin American diplomats, and he told them "if we make the peaceful means of revolution impossible, the violent means of revolution are inevitable."

John F. Kennedy was killed by the violent act of a madman, but his words were invoked five years later by Martin Luther King when he spoke against the Vietnam War. King said that the Vietnam War was a shocking act of violence against the Vietnamese people.

He also said it was a shocking act of violence against the American boys and girls who were drafted to fight a war they did not understand or support. King stressed there was another kind of violence rampant in the American state, violence against black men and women in the United States.

King said we had cut off these means that Kennedy had spoke of, he called for a "radical revolution in values." He said we must "move from a thing oriented society to a person oriented society" if we were to address the root causes of our society. King was saying we must redesign our world.

The only way we address these kinds of structural situations we find ourselves in our world today is by changing how we govern ourselves. We do this by invoking the rule of law. Slavery only began to come to an end in the United States with the Emancipation Proclamation and the 13th Amendment to the Constitution.

The purported formal end of slavery, of course, was quickly replaced with the struggle against sharecropping in the US. In India, there was the sharecropping of indigo farmers at home and the system of overseas indenture that Gandhi fought in South Africa. That form of involuntary servitude only came to an end in India when the cruel system know as girmiti was finally outlawed with the Indian Emigration Act of 1917.

Note on Visit to Sabarmati Ashram

The struggle for suffrage only ended with the right to vote. Segregation only began to be addressed by the Civil Rights Act of 1964 in the US, with the end of apartheid in South Africa. Each struggle ended, and another one began.

In no case are these problems truly solved, but they can only be addressed as part of a campaign of continuous struggle. Slavery still exists in our world. The U.S. claims universal suffrage, yet the poll tax has now been replaced by discriminatory voter identification laws that do nothing to mitigate the nonexistent issue of voter fraud, but serving only to actively discourage people from voting.

While we can never make our world perfect, while we will always find one evil supplanted by another, we must use the tools we have, and the most powerful of those is the rule of law. In a democratic society, we own our government. We as a people define our rules and our obligations. While our governments too often appear distant and uncaring (and too often they are in fact distant and uncaring), it is when we reclaim our ownership and invoke the rule of law that real change can begin to occur.

There are three principles to the rule of law. The first is that the law shall be written down in advance, that we do not make up the law as we go along or look back in time and declare actions to be retrospectively illegal. This is the principle that John Adams so eloquently stated when he said we are an empire of laws, not a nation of men.

The second principle is that the laws shall be made public. In a world where ignorance of the law is no excuse, this principle seems obvious and easy, but I have come to learn through hard experience that this requirement of promulgation has all too often been practiced in the breach.

The first two principles, writing down and then publishing the law, are necessary but not sufficient. One can have a law stating that people of color may not eat at white lunch counters in the American south, and one can make that requirement widely known, satisfying both of those principles, This is only rule by law, not yet the rule of law.

The third principle is that laws shall be general, they shall not apply only to one person or one group. Saying that "Indians and Asiatics" must register themselves, pay a one pound registration tax and carry their registration papers at all times, is a fundamental violation of the rule of law that Gandhi fought in his satyagraha in South Africa.

It is clear in our modern world that there is violence we must struggle again, the violence that Sam spoke of, the violence of the state, the violence of terrorism, the violence of people against their neighbors and families. But there is much more than physical violence. There is a the shocking violence against our planet of global warming and pollution. There is the violence of disease, of lack of water, of famine in a time of food surplus.

The rule of law says that the law shall apply to all equally, but it does not today. We must fix that, but we need more. We need equality of economic opportunity and equality of political opportunity. Only by changing how our governments work, only by redesigning the world, will be able to begin to address what faces us today.

In our world of the Internet, we must also address one more issue, and that is equality of access to knowledge. Despite the great promise of the Internet, we have all too often cordoned off knowledge, hiding it in walled gardens, requiring licenses from private parties before we may educate ourselves. Universal access to knowledge is the great promise of our times, the grand challenge of our generation. It is our opportunity, it can be the legacy we leave the future, the great leveler that can lay a foundation so we all participate in the questions of how we govern ourselves as democratic societies.

...

My trip with Sam in late 2016 opened my eyes, it was an antidote to 10 years of struggle in the U.S. where I have been sued for posting the law, enjoined by federal judges from speaking public safety codes. The trip opened my eyes to life in India but also gave me faith that, if we struggle, we can change our world.

The visit to Gandhi's Ashram, speeches in Rajasthan, meeting members of parliament in Delhi, these were experiences I treasured. I knew the trip was going to be special when I first arrived in Delhi. Sam had arrived a few hours prior and I was met at the door of the plane by a protocol officer and rushed through customs. I arrived at Dinesh Trivedi's government bungalow and met Dinesh face-to-face for the first time. Also present was a fascinating businessman, Manav Singh, the owner of several aviation companies including an air ambulance service and an old friend of Dinesh and Sam. Manav took us out to dinner to the Japanese restaurant at the Taj Hotel. As we drank Matsutake soup and ate sushi, the subject of Mother Theresa came up.

Note on Visit to Sabarmati Ashram

Manav remarked "Oh! She was something!" I asked if he had met her. Manav smiled, and told me that Mother Theresa had presided at his naming ceremony. I asked if he was Catholic and he laughed and said no, that didn't matter, she was an old family friend. He whipped out his wallet and pulled out a picture of himself as a baby with a smiling Mother Theresa.

I was impressed. Sam then cut in. "Oh yes, she was relentless, I remember she came up to me on the airplane once and said Sam, you must read this." She handed Sam a card with a biblical scripture on it. She did that a lot, Sam said. He still has her cards.

I remarked that this was really quite remarkable, here we were four people having dinner and two of them knew Mother Theresa. Sam and Manav started laughing.

Dinesh is a Member of Parliament from Kolkata, where Mother Theresa had her headquarters. Dinesh smiled shyly and explained that he and his wife used to drive Mother Theresa all over town in his tiny little car. She'd be in the front seat, giving instruction to Dinesh and his wife on how to drive and where to drive. When she came back from receiving her Nobel Peace Prize, Dinesh travelled with her from Delhi to Kolkata and then accompanied her back to her house. "She had a very strong will," Dinesh remarked.

Four of us at dinner, three of them knew Mother Theresa personally. I was impressed. India clearly had much to teach me. This is when my hope in the possible success of this satyagraha campaign was renewed. I had begun to despair hope under the legal onslaughts from the U.S. and Europe, and in India I was seeing a light at the end of the tunnel. In India, people might listen and I resolved to return frequently. I wanted to do this, as Justice Ranade so aptly put it, to educate myself and to educate my rulers. Access to knowledge is the great promise of our times and to make that promise real is the great challenge of our times. I returned from India determined to renew my efforts.
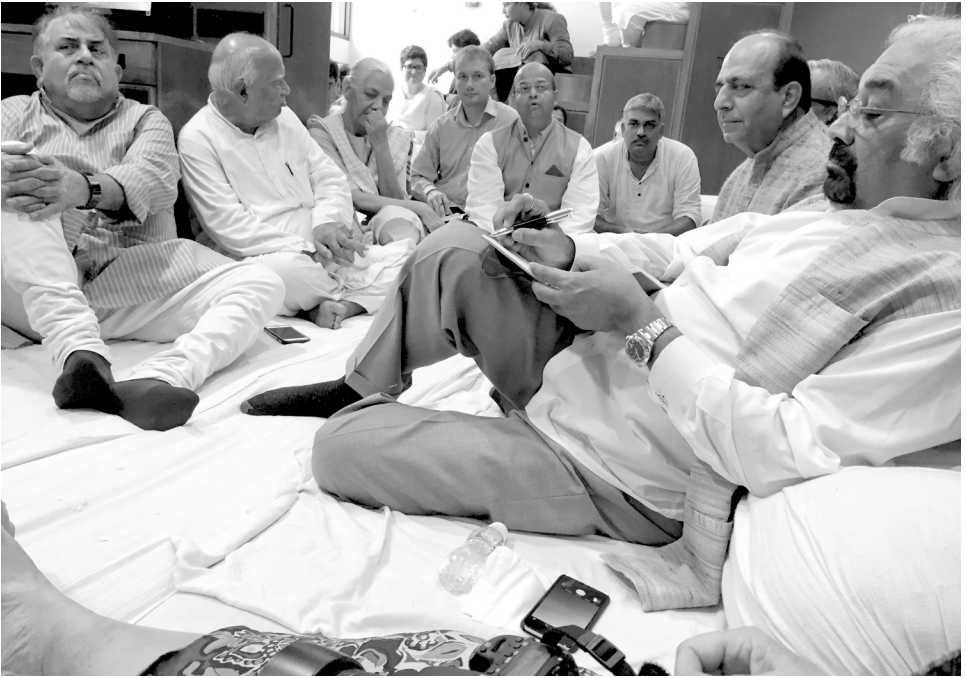
At Sabarmati Ashram, Sam Pitroda jots down notes in the workshop.

Sarabhai-ji (holding folder) getting breakfast at Sabarmati Ashram.

Carl, Sam, and Dinesh Trivedi pose for photos at Sabarmati Ashram.

At the Kochrab Ashram, Students spinning.

Ela Bhatt looks over Gandhi postcards at the Kochrab Ashram.

Schoolchildren gather at the Sabarmati Ashram.

Access to Knowledge in America and India, Remarks of Dr. Sam Pitroda

June 14, 2017, The Internet Archive, San Francisco

Ambassador Venkatesan Ashok. My friend, Carl, whom I have known now for several years, and have worked together on and off in India and in the US. Our host, Mr. Kahle. Ladies and gentlemen. Good evening.

It is indeed a special privilege for me to be here with you on this special event to really talk about sharing knowledge between India and the USA.

My interest in this project clearly started way early when I was chairing the National Knowledge Commission set up by Dr. Manmohan Singh in mid-2006 or so. At that point in time, we were really interested in building the institutions and infrastructure India would need to drive knowledge-based economy in the 21st century.

We essentially focused on access to knowledge, which included libraries, networks, translations, affirmative action program, reservations, quotas, broadband networks. We looked at all kinds of education from primary to secondary school, vocational, university education, medical education, distance learning, open sourceware, teachers' training.

Then we also looked at creation of knowledge, who creates knowledge, how knowledge is created. Coupled with that, we looked at intellectual property, patents, copyright, trademarks, and application of knowledge in agriculture, health, and small and medium scale industries. Finally, the role of knowledge in governance. As a result of this initiative, we built the National Knowledge Network.

We built a variety of portals for environment, energy, water, teachers' training. Then finally, we built a massive portal on Mahatma Gandhi.

In my early days, I went to a Gandhian school as a young boy of 10. All of the Gandhian values were ingrained in our day-to-day life. Being a Gujarati family living in Odisha, Gandhi was the only connection for my parents to Gujarat. We constantly kept Gandhi alive in our thoughts, in our day-to-day activities.

Just about that time, when we were working on the Gandhi portal, I came across the work of Carl, and we got connected. Carl had this mission to take standards from government documents and put it on Internet. I thought it was a very important initiative, but every time Carl tried to do that, he was hit by court cases from the governments.

All governments feel that public standards, whether it has to do with safety, fire, or building codes, are properties of the government. They say that Carl, by putting it on the Web, is violating IP [intellectual property] laws.

When I heard about that, I got even more excited, because to me, it was a Gandhian way of satyagraha. I said, "Carl, we need to fight this battle. They may be legally right, but they are morally wrong."

[applause]

All these standards are really for public safety, public good. How could you then not allow access to these standards to larger public? Why do I have to buy standards for electrical wiring in my house, when I know that bad wiring could be a fire hazard?

Governments don't allow you to do that. Carl is faced with court cases all over the world in the US, in Germany, in India, and you name it.

Our job is to fight this, mainly on the moral ground, that this is public information, it should be made public, and no one should listen to old, obsolete laws by the government.

When I look at Internet, and the power of Internet, I realize that we are far behind in our mindset to really deal with the opportunities knowledge and Internet provides us. Many times in India, I used to say that we have 19th century mindset, 20th century processes, and 21st century information age opportunities.

What Carl is trying to do with standards is really to bring to public notice that we must change our laws.

Everywhere you look around, you will find that the processes are all obsolete. Nowhere you will find anyone standing up to the old processes and say, "This needs to go, and we need to create new processes, new laws." Some of it is happening, but not at the pace it should.

Remarks of Dr. Sam Pitroda

When we are looking at knowledge economy, we also realize that knowledge is really the fourth pillar of the democracy of the future. Today, there are three pillars of democracy: executive, judiciary, and legislative.

We are convinced that knowledge and information is the key to the democracy of tomorrow. Somehow, this message has not really been communicated effectively to large numbers of people. Today, on one hand, we have all the laws which are based on economy of scarcity when we live in a world where we have economy of abundance.

We can produce lots of food, just to give you an example, in India. Not too long ago, people taught that India will not be able to feed 600 million people. India was considered a basket case. Today, not only can India feed 1.2 billion, but India has surplus food. At the same time, 200 million people are hungry in India because we have not used information technology to really get all the logistics in place to deliver food to the right people at the right time.

These are the challenges that need new mindset, new thinking.

This really brings me to the part that I have been working on for quite some time. I believe that the world essentially needs to be redesigned.

Carl and I have been having this conversation for about two years. World was last designed by the U.S. after World War II, with UN, World Bank, IMF, NATO, WTO, GDP, GNP, per capita income, balance of payment, trade deficit, and all kinds of indicators.

Right after that design, world got decolonized in a short period of 20 years. Deng Xiaoping came in and said, "I'm going to combine capitalism with communism." Gorbachev came in and said exactly opposite is what Soviet Union needs. He failed in his experiment, but he also succeeded in this experiment in releasing energy of lots of small countries.

Everyone came out with the same aspirations of democracy, free markets, capitalism, human rights, which was the basic thesis of the old design. That design worked well for the U.S. This is something that is not scalable, desirable, workable for large number of countries in the world.

Information gives us an opportunity to create a new design which is more focused on inclusion, human needs, new economic measurements, regenerative

economy, focus on environment, conservation as opposed to consumption, and finally, non-violence.

[applause]

Again, that ties into Gandhian thought. I believe Gandhi is more relevant to the world today than ever before in the history.

Through Internet, we can really reach out to large number of young with Gandhian thought. With all the things we have in the world, with the new technology and the possibilities, there is hardly any reason to fight, because there is just so much that is going to happen in the next 20 years in terms of longevity, production, food, transportation, communication, medicine, environment, energy.

This should give whole new way of restructuring of our societies.

There is very little conversation today about redesigning the world. Everybody is locked into the old design. Everybody thinks we must copy U.S., and we must do what U.S. has put on the table 70 years ago. I am one of those who firmly believe that that design just doesn't work anymore.

I think what Carl, the Internet Archive, and all others are trying to do, in a sense, is to democratize information, empower people, give them more rights to their own destiny, make them participate in their democracy.

Today, in many countries, there is democracy, but there is very little freedom to act.

The Internet Archive, and the Internet, are putting kinds of these documents in the hands of larger public, make it available, accessible anytime, anywhere at almost no cost really gives whole different dimensions to the future of the world.

I am very excited about the potential. I want to be party to it. I am delighted that I have had the opportunity today to be here with Carl.

Carl and I went to India last year in October on October 2nd. We had a major event at the Gandhi Ashram, where I had called a meeting of about a hundred people.

Remarks of Dr. Sam Pitroda

We all spent a day thinking about how do we take Gandhian thought outside? How do we bring non-violence in homes, communities, cities, states, countries, between countries?

Unfortunately, in the world, there are hardly any institutions on non-violence. All of the people who discuss peace at the table are basically from military. They have no interest in non-violence. Non-violence is never taught.

I live in Chicago. I lived in Chicago for 53 years. Let me tell you that with all the technology and wealth, with all the expertise, Chicago hasn't changed at all in 53 years. There are more gun shootings in all sides of Chicago than ever before.

There is absolutely no reason for it.

You will be surprised to know that in US, almost one percent of the population is in prison. Largest number of prisoners per hundred people are in the US. I am told world average is about one person per thousand, and the US is one person per 100, which is unthinkable.

Through information technology, through all of the stuff we are doing today, I think we need to spread knowledge to large number of people. Equip them with the right tools, and that's what we are trying to do here.

To take 500,000 books from India and put it on Internet Archive is a massive task. I know that there are some great books in Indian languages in Gujarati, Bengali, Odia, Tamil, Hindi, which the world audience doesn't get to read.

They don't even know that this literature is meaningful. Every time people talk about literature, it's all about English literature. No one even thinks about Tamil literature.

Two months ago, I met a friend of mine. He said he found a book in the library in Tamil Nadu, a 600-year-old book written where he said he read through a chapter on child-rearing. He said, "If I translated that chapter today in English, all of the doctors would be surprised," but somehow that literature is lost because it's in the local language.

We need machine translation capabilities which can take a lot of the good books out of these different languages and put it in English. What Carl has tried to do is also put in some of the Indian language books on the Internet Archive, which

is a great contribution. It's a good beginning, and I hope more and more books from other Indian languages get on the Internet Archive.

Carl, I want to thank you for all your hard work, sincerely appreciate what you have done. I believe you will tell us a little bit more about the Internet Archive, all the books you have put in, and educate all of a little more about what's going on.

I am delighted to be here at the Internet Archive. It is indeed like coming to a temple. It means a lot to me, because it is a temple of knowledge. I had no idea about the building. I had read about it. I had heard about this from Carl, but I am so happy to be here.

I hope I come here more often, and participate, work with you all, and really learn a bit about what's going on here. With this, once again, I want to thank you all for coming.

I want to thank my colleagues on the panel. I also want to identify a few key people that I must name, because they are my close friends and family, and they are here. To begin with, I am delighted that my own granddaughter, Aria, is here.

[applause]

This is the first time she has heard me speak. She kept asking me, she said, "Dada." Dada is grandfather. She says, "What are you going to talk about?" I said, "I don't know."

She said, "Have you made notes?" I said, "No."

[laughter]

She said, "Are you going to talk about your telephone work in India?" I said, "No."

Then she again asked, she said, "But then what are you going to talk about?" I am delighted that she is here.

My daughter is also here, and when I give public speeches I worry about her, because how to make her happy. If I don't give a good speech, she will tell me, "Dad, that wasn't good."

Remarks of Dr. Sam Pitroda

[laughter]

Then I have my wife here, my daughter-in-law here. A very close friend of mine, member of parliament from India, Dinesh Trivedi, is here with his family, his wife, and his son.

[applause]

Another friend of mine, Rajat Gupta is here. Thanks for coming.

[applause]

Finally, another friend of mine, Nishith Desai, and his whole family has come from Mumbai. Thank you, Nishith Bhai.

And thank you all for coming here, and thank you for hosting us. Thank you.

For the June, 2017 event, Gandhi posters were installed outside the building to mark the occasion. Photo by David Glenn Rinehart.

Samosas, nan, mango lassis, and a large assortment of pickles and masala dried fruits imported from Mumbai were served. Photo by David Glenn Rinehart.

At the Internet Archive, Dinesh Trivedi (left) enjoys pickles and samosas before the event. Photo by David Glenn Rinehart.
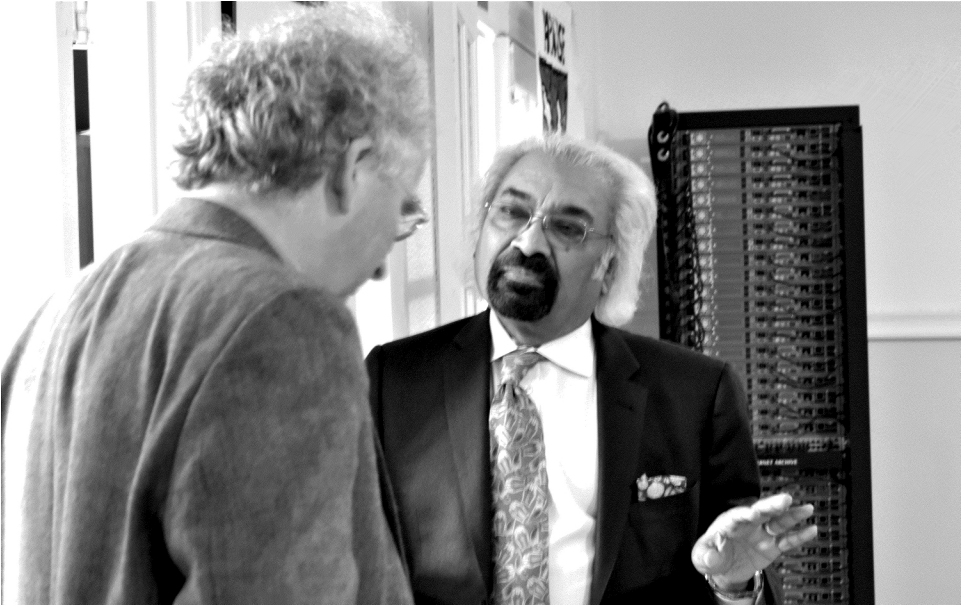
Brewster Kahle and Sam Pitroda confer before the event. Photo by David Glenn Rinehart.

Dinesh Trivedi and family listening to the speeches. Photo by David Glenn Rinehart.
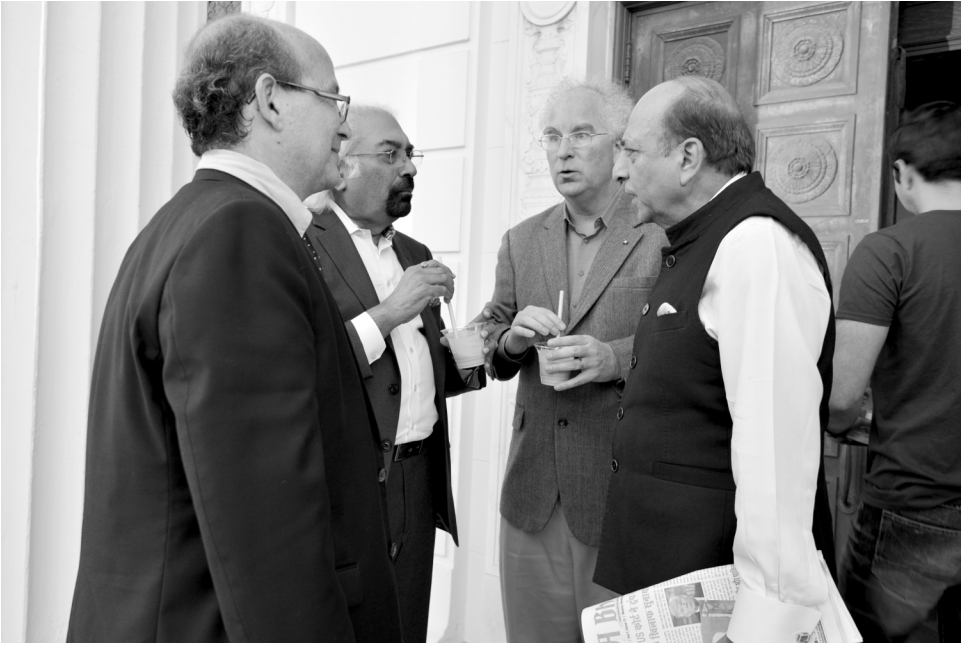
At the Internet Archive, enjoying a mango lassi on the steps after the close of the event. Photo by David Glenn Rinehart.
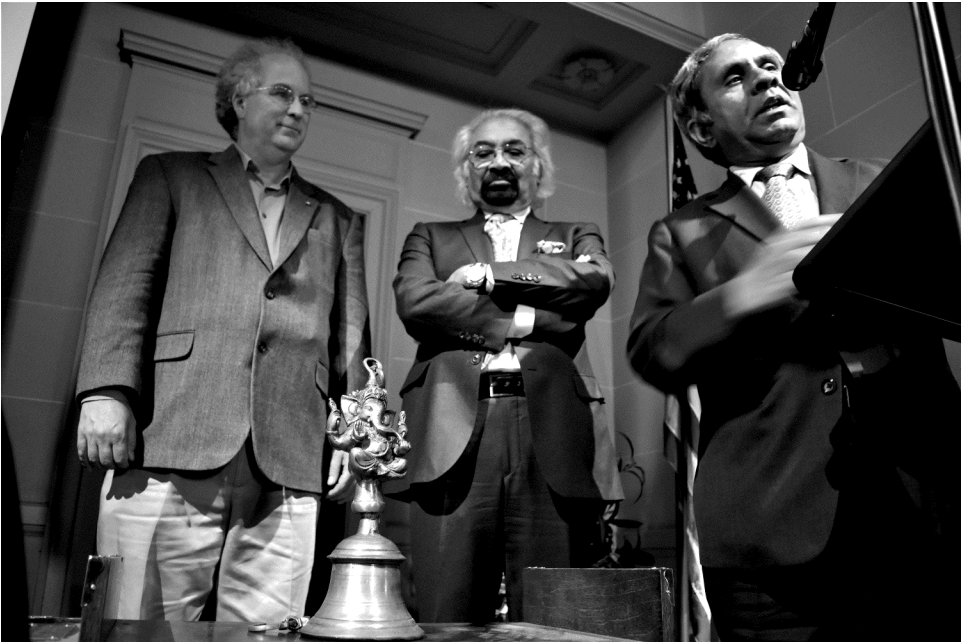
At the Internet Archive, Hon. Ambassador Venkatesan Ashok explains the significance of the Puja Bell. Photo by David Glenn Rinehart.

Ambassador Ashok presides over the presentation of a 20-pound Puja Bell for the Internet Archive, a temple of knowledge housed in a converted church. Photo by David Glenn Rinehart.

Access to Knowledge in India and America, Remarks of Carl Malamud

June 14, 2017, The Internet Archive, San Francisco

Thank you Sam. I had the great pleasure of tagging along with Sam in October as he went barnstorming through India. We spoke at the Sabarmati Ashram on Gandhi-ji's birthday, there were speeches to the Indian Institution of Engineers, at the Mayo Boy's College, at Rajasthan Central University, and everywhere he was mobbed with admirers. When we got out of the car at Gandhi's Ashram, there were at least 100 people who surrounded him taking selfies.

His contributions to India for over 50 years, from bringing telephones to every village to his more recent work advising Prime Ministers, creating food banks, and so many other things, have been immense. Thank you for joining us tonight.

I have a few closing thoughts, but before I get to those I would be remiss if I did not thank some of the people on whose shoulders we stand tonight. The Digital Library of India would never have been possible without the visionary efforts of Carnegie Mellon University and the Million Books Project pioneered by Professor Raj Reddy and Dean Gloria St. Clair.

In India, the Digital Library of India project has been headed by a distinguished computer scientist, Professor Narayanaswamy Balakrishnan. The Digital Library of India is now a project of the government of India with 25 scan centers throughout the country, and it is a huge undertaking.

The library has 550,000 books scanned, and we have over 400,000 of those spinning and available today here at the Internet Archive. We're delighted to be working closely with the project.

It truly is a remarkable collection, particularly when it comes to Indian languages. There are over 45,000 books in Hindi, 33,000 in Sanskrit, 30,000 in Bengali, and much more. Overall, there are 50 different languages represented.

When books are ingested here at the Internet Archive, you'll see that in addition to the basic PDF file, they are run through Optical Character Recognition.

In addition to OCR, you'll see that the books are transformed into formats that work with your e-book reader, your Kindle, and your tablet. You can search

across the collections using advanced criteria, and you can even search inside the books.

One of the things we're trying to do on the collection is help improve the metadata. One of the engineers here at the Internet Archive has been experimenting with fuzzy matching on titles, creators, and other metadata fields to try and link each book to identifiers such as ISBN numbers and the Open Library card catalog.

You'll notice at the bottom of each item in the Digital Library of India there is a spot for "reviews." Professor Dominik Wujastyk, a distinguished Sanskrit scholar at the University of Alberta, has been using that space to add much better metadata to dozens of books he knows about.

You could do the same thing! If you speak Gujarati, for example, go through some of the 13,000 Gujarati texts and use the reviews space to let us know if there is a better title or author, or maybe if we just got it all wrong! We need your help.

Our second collection tonight is Hind Swaraj, a project that I've had lots of fun putting together. This started when I went to see Sam a while back. While we were chatting, he pulled out his laptop and asked me "You have a stick?"

I handed him a USB drive and we continued talking. At the end, he handed me nine gigabytes of PDF files. I asked him what they were and he said "100 volumes of the Collected Works of Mahatma Gandhi in the new electronic edition." I was astounded.

The 100 volumes of the Collected Works was created by the Sabarmati Ashram, in particular by Dina Patel, who has toiled for years with a team of volunteers to create this definitive electronic edition of the works of the Mahatma. It is truly a monumental accomplishment! She is now putting together the resources to create the Hindi edition of all 100 volumes, and I am looking forward to seeing that come together. It has been a real pleasure to work with her.

When I posted the Collected Works, I started looking around the net for other resources in a similar vein and found the complete works of Jawarharlal Nehru on a government server, but not in a terribly useful format and I assembled those into PDF files. There were three volumes missing, and I've found and scanned two of them, and just ordered the last one. We're almost complete with 77 of the 78 volumes.

Remarks of Carl Malamud

Likewise, the first 20 volumes of the complete works of Dr. Babasaheb Ambedkar were also on a government web server, and I'm pleased to announce that we have now supplemented that collection with the last six volumes that were not previously available, so that set is now complete.

The collection is much more than books though. There are 129 audio files of Gandhi-ji speaking on All India Radio. For each of those audio files, I extracted the English translation or report from the Collected Works and put that with the item. After listening to the speech, you can read the translation, then click into the Collected Works to see what Gandhi-ji said the next day and the day before that, letting you walk through all his public speeches in the last year of his amazing life.

In addition to Gandhi-ji's audio files, there are quite a few audio files of Nehru, Rabindranath Tagore, Rajiv Gandhi, Indira Gandhi, Netaji Subhas Chandra Bose, Professor Radhakrishnan, Saradar Patel, and more.

I'm really pleased that the collection also has all 53 episodes of the 1988 Doordarshan production Bharat Ek Khoj, the history of India as told by Nehru in that fantastic book he wrote while sitting in a jail cell, the Discovery of India.

All 53 episodes have subtitles in English, and we've been working with an innovative Bengaluru startup named E-Bhasha Language Services. For six of the episodes—including both of the Gandhi episodes and both of the Ramayana episodes—we now have subtitles not only in English, but also in Hindi, Urdu, Punjabi, and Telugu. Our hope is to get all 53 episodes subtitled this way so the history of India can be available to schoolchildren all across India and around the world.

We have two more resources relating to India.

First, I found 90,000 photographs on the Ministry of Information servers that were publicly viewable, but not in a very convenient way. I pulled all of them in, and took 12,000 of the photos that are of high quality and historical significance and put them on Flickr, sorting them out by catagory. I you want photos of trains, or temples, or rural India, or cricket, or pictures of Nehru and Indira Gandhi when she was a little girl, there they are.

Finally, there is a collection which is the one I have spent the most time on, and that is the technical public safety standards of India, over 19,000 official Indian

Standards. You can find them on the Internet Archive and also on my server at law.resource.org.

Our world is a technical world today. Technical public safety standards cover areas such as the National Building Code of India, standards for the safe application of pesticides, standards for processing spices and food, standards for the proper operation of textile machines, the safety of bridges and roads, and much more.

Many of these standards are required by law or enacted into law. They are the law. There are dozens of products that you cannot sell in India unless they are certified to meet a particular Indian Standard, products such as cement, household electronic goods, food products, and automobile accessories.

Knowing the laws that keep the factories and products safe is essential to the conduct of business in India and overseas. You cannot make in India unless you make by these rules. These codes are law.

But, this is about much more than the economy. Indian Standards specify how to keep Indian cities and villages safe, how hazardous materials should be transported, providing proper exits in schools and public buildings in case of fire, how electricity should be safely wired. Every city official, school headmaster, building owner, and concerned citizen should have access to this important government information.

This is also not just about the economy and public safety, it is about education. Indian Standards represent the best codified knowledge of the technical world of India. The standards are created by eminent engineers, civil servants, and professors who volunteer their time. These standards are a crucial educational tool to be used by the six million engineering students in Indian universities.

For the Indian Standards, we have done more than simply scan and post the documents. Close to 1,000 key standards have been transformed into modern HTML. We have redrawn the diagrams into the open SVG format, we have reset the tables. This means you can view the standards on your mobile phone and it is easy to cut and paste high-quality diagrams and text into your paper or software program, they have become much more usable.

All across the world, not just in India, technical public safety laws are sold for very high prices and many of them bear stringent copyright notices prohibiting duplication. The National Building Code of India, for example, costs 13,760

rupees. That's $213. For a book! In India! And, if you want to buy one outside of India, the foreign price is 1.4 lahkh rupees. $2000. For a mandatory building code!

One would think it is obvious that these documents, which have the force of law and govern the safety of our society should be available, but all over the world these public safety laws have been sold under onerous terms and caviar prices. This is a global problem, a problem that reaches beyond partisan politics and political divisions.

I set out 10 years ago to change this situation, and it has been a long journey. In India, we presented our case for more open distribution of these government documents in a formal petition to the Ministry. I was joined in this petition with affidavits from Sam, from Vint Cerf—the father of the Internet—and by distinguished engineering professors throughout India.

When the petition was turned down, we presented ourselves to the Honorable High Court of Delhi in New Delhi in a public interest litigation suit which is ongoing. I am joined as petitioner by two of my colleagues in India, Mr. Srinivas Kodali, a transportation engineer and Dr. Sushant Sinha, the creator of Indian Kanoon, the free, public system that provides access to all court opinions and all laws.

We are represented before the High Court by Mr. Nishith Desai and his firm, and by the Honorable Salman Khurshid, the former Minister of Law and former Minister of External Affairs. I am very pleased that Mr. Desai is here with us tonight.

Availability of the law is not just a question for India, it is a global challenge. We have a similar suit in the Court of Appeals in the United States, and in Europe we are fighting in the courts of Germany for the right of citizens to read and post EU-mandated safety standards. For our United States case we are represented in the District of Columbia by EFF and Fenwick & West and I am pleased that Mitch Stoltz of EFF is also in the audience tonight.

What is remarkable in this global legal campaign is that all of the lawyers are working on a pro bono basis, working for free, including Mr. Desai and Mr. Khurshid. There are nine law firms throughout the world assisting us in petitioning our governments, contributing tens of thousands of hours in free legal help.

This is because they believe that in countries governed by the rule of law, the laws must be available, because ignorance of the law is no excuse. The laws must be available for all to read because in a democracy, the laws are owned by the people, the government works for us .We own the law. We must know our rights and our obligations if we are to be an informed citizenry. Democracy depends on this.

When Gandhi-ji was in South Africa, he was much more than just a lawyer. He was also a publisher. He sought to change the world through the courts and petitions, but also in the social media of his day. He was a blogger, a news syndicator. He was cutting edge high-tech in his use of publishing technology.

When he opened the Phoenix Ashram, the very first thing they did was dismantle the printing press in Durban, load it into four wagons, each one of which was driven by a team of 16 oxen, and they hauled that press into the wilderness.

When they got to the new site of Phoenix, there were no buildings yet. The very first building they made was to house the printing press, they camped outside until that was done. At Phoenix, everybody learned to typeset, everybody spent time with the printing press.

This was what Gandhi-ji called bread labor, doing something with your hands every day. Genesis 3:19 says that "by the sweat of your brow you will eat your food" and that became a central tenet of his philosophy. Gandhi-ji said:

"Intelligent bread labour is any day the highest form of social service. For what can be better than that a man should by his personal labour add to the useful wealth of the country? 'Being' is 'doing.'"

That is a remarkable statement, one that we should all heed. We must all do bread labor, and we must all also become what Gandhi called public workers, people working to make our society better, what Gandhi-ji calls "the lesson of service instead of self-interest." Bread labor and public work were two foundations of Gandhi's philosophy and those teachings motivated and inspired people to unite around a common goal.

Our world today is a perplexing place. I worked for 15 years in Washington, D.C. and I have never seen our government in such disarray. The United States is not the only country to face such chaos, though we certainly appear to have brought chaos to a previously unimagined level.

Remarks of Carl Malamud

All across the world, there are wars, the violence of state against state, but also violence of the state against the people, violence of people against each other, against women and children, against people who are simply different. There are shocking and horrific acts of terrorism.

There is famine and disease which we could stop if we only had the will.

There is the shocking act of violence against our planet, violence that we may have committed in ignorance in the past but that today we commit with full knowledge of the implications of our neglect.

As individuals, it is tempting to disengage, to lead our daily lives and ignore the things that seem beyond our powers, to withdraw from participation in public life, to stop holding our leaders accountable. But, that would be wrong.

John F. Kennedy once said that if we make the peaceful means of revolution impossible, then the violent means of revolution are inevitable. I put it to you that despite the chaos of our world, there is also hope. The Internet makes possible universal communications and it makes possible universal access to all knowledge. These are the peaceful means of revolution, but only if we embrace them.

Education is how we can transform our society. We must educate our children. We must educate our rulers. We must educate ourselves.

John Adams wrote that the American revolution was only possible because our founders were men and women of learning, people who knew history. He said that "ignorance and inconsideration are the two great causes of the ruin of mankind." He said that a democracy cannot work if the citizenry is not an informed citizenry. He said we should "tenderly and kindly cherish … the means of knowledge. Let us dare to read, think, speak, and write. Let every order and degree among the people rouse their attention and animate their resolution."

In India, that brave and long struggle for swaraj that led to the birth of a new nation—a struggle that led to that tryst with destiny—a struggle that inspired all the world to action—that struggle was also based on an informed citizenry. Gandhi-ji was invoking Justice Ranade when he said we must educate ourselves so as to warn our rulers.

The men and women who led India into the modern world were scholars and historians as well as leaders. Look at the amazing books Nehru wrote in a jail cell. Look at the immense learning of Dr. Ambedkar, who led the drafting of the constitution. Look at the worldwide reputation of Professor Radhakrishnan, a distinguished leader who was still a prolific scholar during his entire time in office.

In India and America, the largest democracies in our world, we have a special obligation to be informed citizens. We must all be active citizens, we must all do bread labor, we must all be public workers.

Universal access to knowledge is the great unachieved promise of our times. By informing ourselves, by educating our children, by struggling to change the world instead of allowing the times to beat us into apathy, we can all walk together down that road of progress, and, as Martin Luther King so often said,"the crooked ways will be made straight and the rough roads will be made smooth" until, arm in arm, we arrive at that shining city on the hill, that place with a library containing universal access to all knowledge, a free library, a library we can pass on as a gift to future generations.

Please help us build that library. It is bread labor. It is public work.

Jai Hind! God bless America! Thank you!
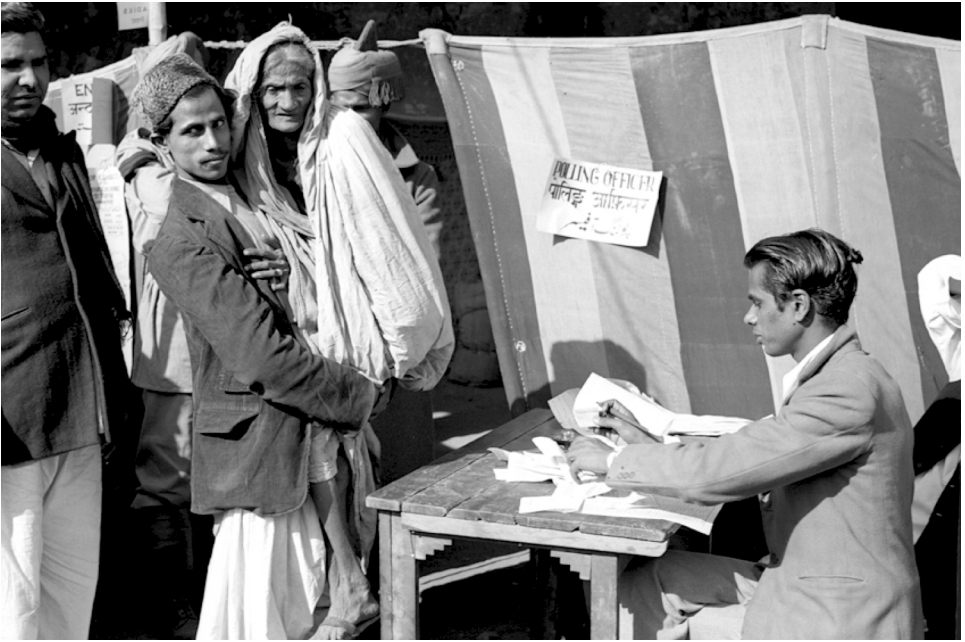
An old Muslim woman being given a ballot paper near Jama Masjid, Delhi, January 1952.

Polling station at Delhi for election to Central Assembly, 1946.

Delhi municipal elections, October 15, 1951.
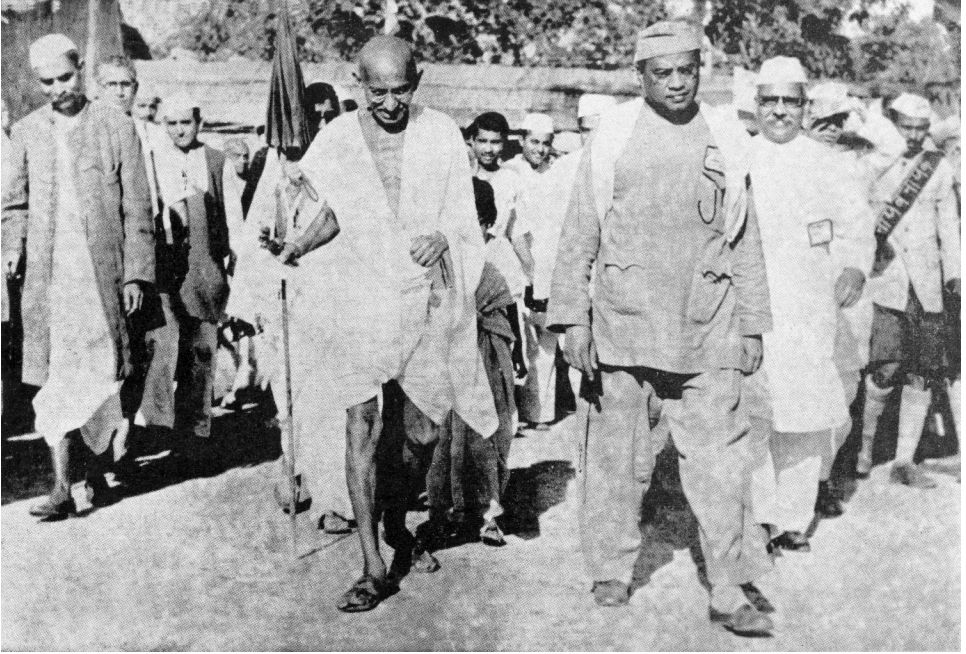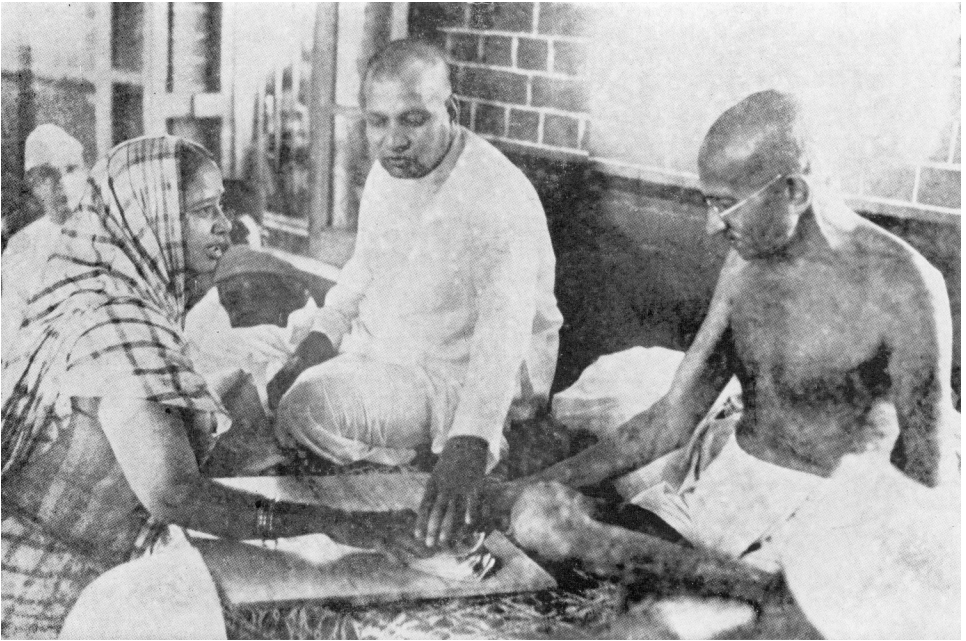

Indelible ink being applied in Delhi, January, 1952.

Villagers of Nagloi near Delhi being given their voting slips, September 1951.

CWMG, vol. 71 (1939–1940), p. 337, With Dr. Rajendra Prasad at Ramgarh Congress.

CWMG, vol. 72 (1940), Frontispiece, With Jamnalal Bajaj in Delhi.

Satyagraha in the Digital Age: What can one individual do?

Carl Malamud, National Herald, July 8, 2017, Special 75-Year Commemorative Edition

Internet has provided our generation a unique opportunity to make knowledge free and accessible. The author, thwarted by Governments in US and India, shows us how.

Our world is in turmoil. Random violence and terror has spread to all corners of the globe, our world is facing a climate catastrophe if we do not act (and we are not acting), income inequality grows wider and hunger and famine continue to spread. What can one individual do when faced with such calamity?

The answer, I submit, lies in the teachings of those who are our leading lights, who fought for decades to right the wrongs they saw in the world. In India and America—the largest and greatest democracies in our modern world—we can look to them. In India, the teachings of Gandhi and Nehru and all the freedom fighters continue to inspire. In the United States, we can look to Martin Luther King, Thurgood Marshall, and all the people who fought so long and hard for civil rights.

The key to action for us as individuals is persistence and focus. Persistence means that changing the world has to be more than a short Facebook moment or a tweet. Persistence means that it may take decades to right wrongs, to educate ourselves and educate our leaders. Educating ourselves is what Gandhi-ji taught his followers in South Africa and in the Congress in India, to focus on ethics, morals, and character. It is a lesson all people who aspire to lead today should absorb.

Focus is also one of the big lessons from Gandhi-ji and from King in the US. Pick something specific that matters and try to change it. Do something real. Make the goal specific: removal of the salt tax, the right to eat lunch at a counter, the right to attend a school, the right to vote in an election, the elimination of sharecropping.

For a decade, I have focused on one specific goal, enhancing the rule of law. John F Kennedy once said that if we make the means of peaceful revolution impossible, the violent means of revolution are inevitable. In a just society, in a

developed democracy, we the people know the rules by which we choose to govern ourselves and we have the capability to change those rules to make our world better.

Why is access to public safety codes restricted?

In our modern world, there are some special kinds of rules, and those are public safety codes. These technical standards govern how we build safe homes and offices, protecting workers of machinery in factories, how to use pesticides properly, the safety of automobiles, safeguarding the integrity of our streams and oceans, and many more topics. These are some of our most important law.

Throughout the world, with only a few exceptions, public safety codes that have the force of law have been deliberately restricted. In the United States, a series of nongovernmental organisations develop our building and fire codes and they are then enacted into law. Yet, those codes cost hundreds of dollars per copy and, most importantly, copyright is asserted so no person can speak the law without a licence from a private party.

In India, the same thing has happened, but it is the government that restricts distribution of vital public safety information. The Bureau of Indian Standards asserts copyright over these codes, charging an astounding ₹13,760 for a book, the National Building Code of India. The Bureau maintains that these crucial public safety standards are their private property and anybody who wishes to read or speak the content requires a license and must pay a fee. Most importantly, the Bureau maintains that no person may make a more usable version of these codes without their permission, which they will not grant.

I heard that when the government-wide disaster preparation task force met and suggested that all government officials charged with emergency response possess copies of this vital safety code, the Bureau rose to inform the officials that they would only provide this material if each official entered into a license agreement and paid their ₹13,760 fee. No copying would be permitted.

I set out to change this situation a decade ago. The small NGO I head started purchasing safety codes with the force of law from all over the world. In the US, I purchased, scanned, and posted over 1,000 federally mandated safety standards. In India, I purchased all 19,000 India Standards and posted them on the Internet.

Satyagraha in the Digital Age

We did more than just buy paper copies and scan them. We took many of the key documents and retyped them into modern web pages, redrew all the diagrams, applied modern typography to the text. We coded the standards so people who are visually impaired could more effectively work with the documents. We made the codes available as ebooks, we provided full-text searching, bookmarks, and a secure web site.

Governments in US & India not pleased

The powers that be were not pleased. In the US we have been sued in intensive litigation with six plaintiffs and our case for the right to speak the law is now before the US Court of Appeals. In India, the Bureau refused to sell us any more documents and—after a petition for relief to the Ministry was denied—we joined with our colleagues in India in a Public Interest Litigation suit that is currently before the Honorable High Court of Delhi. Our lawyers all donate their time, they are "pro bono," but they have donated over $10 million in free legal help to defend our work.

While we pursue justice in court, we are also continuing to make these documents available on the Internet to tens of millions of viewers every year. The Indian Standards are particularly popular in the great Indian engineering institutes, where students and professors are delighted to have easy access to crucial standards they need for their education.

Every generation has an opportunity. The Internet has provided our world with a truly great opportunity: universal access to knowledge for all people. I focus on access to edicts of government, the laws of our great democracies, but that is only a small part of the great promise.

We should set our sights higher. In our modern world, there is no excuse to restrict access to scholarly literature, technical documents, the law, or other storehouses of knowledge. As Bhartrhari's Nitisatakam teaches us, "knowledge is a treasure which cannot be stolen." Knowledge should be free to all regardless of means.

Universal access to knowledge and the rule of law are the way that our world might surmount these seemingly insurmountable obstacles we seem to face today. But, it will only happen if we engage in public work as Gandhi so often told us to do. And, it will only happen if we all focus on specific goals and do so persistently and systematically.

Martin Luther King taught us that change does not come rolling in on the wheels of inevitability, it comes only with continuous struggle. We can change the world, but we must struggle. If we do so, we can walk up that road which gives us all access to knowledge and together reach that shining city on the hill where justice flows like water and righteousness like a mighty stream.

Visit to the Young Pioneers Palace in Shanghai on October 28, 1954.

December 16, 1956, At President Eisenhower's farm in Pennsylvania.
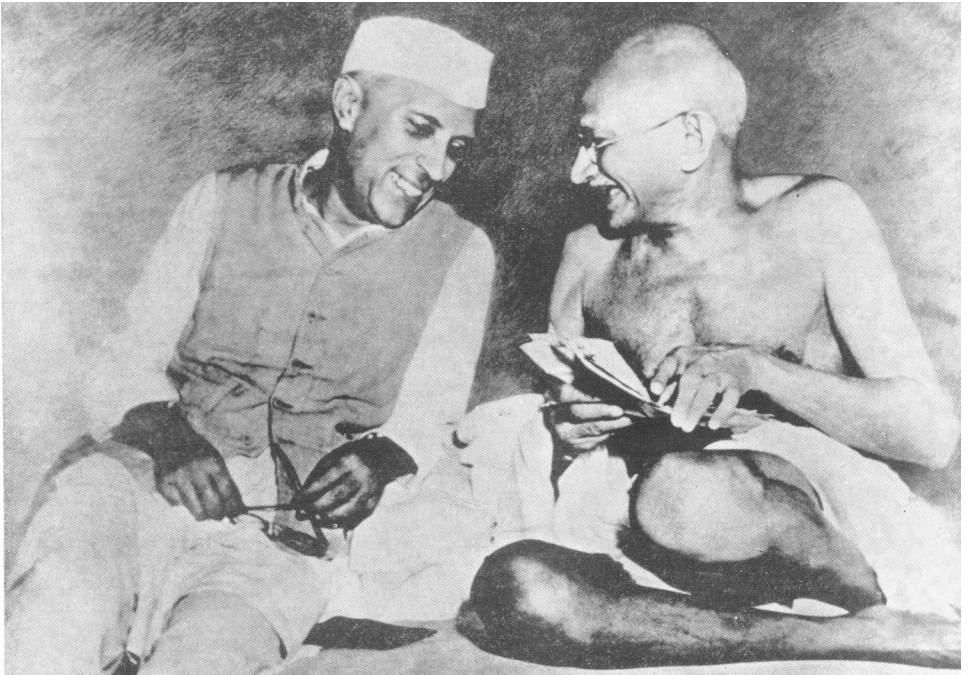
Prime Minister Nehru at a Children's Day Celebration in New Delhi on November 14, 1957.

Prime Minister with workers who constructed a road for his journey to Bhutan on September 16, 1958.

CWMG, vol. 73 (1940–1941), Frontispiece, On the Way to Meet the Viceroy, Simla.

CWMG, vol. 84 (1946), Page 81, With Jawaharlal Nehru.

Right to Information, Right to Knowledge: Remarks of Dr. Sam Pitroda

Friends, good afternoon. It is indeed a special privilege for me to be with you all.

I didn't realize what I was getting into. When I came here, Carl told me that we have a meeting this afternoon and he gave me a little background on what we are going to do yesterday, so I come in here at NUMA, and I said, "Are you sure we are in the right place?"

But I am so happy to see you all. I am amazed at what you young people are doing in India today. I am so proud of you. I met someone who is working on tribal people. I met another one working on kanoon. Meet a lot of you who are really very interested in building new India.

When I see some of you, I feel so excited about the future of India. My journey has been a long one. I was born in 1942. I am 75 years old, and those were the early days of India's independence.

Growing up to us, Mahatma Gandhi, Nehru, Patel, Kalam Azad, Subhas Chandra Bose were the real ideals in our mind. We grew up with Gandhi and taught inclusion, truth, trust, self reliance, simplicity, sacrifice, courage.

All of these words meant so much to us as little kids. My father had no education. But in our house we had five big photographs, that big, of these five leaders, and their idea of India was the key in our mind while we were going through schools and colleges.

I went to US in 1964, and as I learned a little bit there in 60's, I realized that there are three fundamental issues in India: disparity, demography, and development. And I also realized that to really overcome these, first we need connectivity.

In 1979, I came to Delhi and couldn't make a phone call to my wife in Chicago. This was from five star hotel.

So, with a little bit of arrogance and a lot of ignorance I said, "I'm going to fix this damn thing." And I spent next 10 years of my life trying to fix India's phones.

Rajiv Gandhi gave me the political will, and I felt without connectivity, there is no start. Then we had two million telephones, it used to take 15 years to get a telephone connection. You may not know, but your grandfather would know, your father also may not know. And today, we have 1.2 billion phones. We are a connected country of a billion.

The key question is, what do we do with this connectivity?

Second challenge was knowledge. And to bring knowledge in open domain, you need to use this connectivity and democratize information. So we started with knowledge commission, right to information, right to knowledge, all of these things didn't mean much to people we were working with. They had no idea of what it is we were talking about. I remember when I started my work in telephones, there were so many critical front page stories in India saying why are these foreign return guys trying to fix India's phones when you need to worry about food and agriculture?

And my answer to them was, "I don't know how to fix agriculture, find somebody else. I know how to do my job. I can try to fix phones, I don't guarantee I'll be able to do it, but every little thing in India matters. You do what you know how to do best, somebody else knows something else, and we all add little drop here, little drop there, and then hopefully it adds up."

All of the things that we dreamt of many years ago, you are really making it happen. Without your support, all of our work will be lost. Nobody will ever understand.

To me, open government is the key. Open data is the foundation. So when Obama came here, he and I spent half an hour, and I tried to explain to him what we are doing in India by putting more fiber to connect rural India, we connected him to Rajasthan, and when I explained to him the kind of platforms we are trying to build, connectivity platform, GIS, UID, data centers, cyber security applications, he was amazed.

He said, "Sam, how do you all think about things like this?" And my answer to him was, "If we don't think like this, we cannot build new India." It is very difficult to build New India with old tools.

Remarks of Dr. Sam Pitroda

The only hope we have is to use new tools and our younger talent. I am a firm believer in young talent in India. When I started CDOT [Centre for Development of Telematics] in 1984, average age of the organization was 23. They were the brightest kids, hard working, sincere, honest, committed, courageous, dedicated, nationalist, and they made things happen.

People used to say, "Why are you hiring only young?" I said, "Because they are fresh, they are full of energy, enthusiasm, and they are not corrupt mentally."

We have lots of problems in India, but we have lots of challenges. So when people tell me about problems in India, I tell them, "You don't need talent to identify problems in India." Nor do you need talent to identify solutions in India. You really need courageous people who are willing to give something, to go back and do something for the people of India.

We have a long way to go. There is work cut out for the next 50 years. For last 40 years, I've been saying, "Best brains in the world are busy solving problems of the rich, who really don't have problems to solve."

And as a result, problems of the poor don't get the right kind of talent. India is the only country where you will find talent comparable to anywhere else in the world that would have some feelings to solve the problems of the poor. India is the only country where you will find solutions to lift 400 million below poverty line and then that solution can be applied to other parts of the world.

We are a land of contrast. Anything I can say about India, you can say exactly opposite and you are 100% right. And that is the beauty of India. Diversity is a fertile ground for innovations, and we are the most diverse country in the world. And maybe they don't look like so-called Indian.

I remember once I was in Mexico and I was looking for Indian ambassador. I was a keynote speaker with 500 people and somebody said, "Indian ambassador is coming." So I went to receive him, and I couldn't find him. Finally I said, "Where is he?" A guy said, "Oh, he was waiting for you, he's sitting in the front row."

I go, and he looks like Chinese. Because he's from northeast. And even with my background, I sort of assume that he's an Indian ambassador, he should look like me.

That is the beauty of India. India has so much to celebrate, but I worry at times when I look at the India today.

When people try to guard information, when people spread lies on social media, attack freedom, it matters. And that's where you all come in. You have to really preserve this trust, at least in the cyberspace, for development for everybody. No untouchability, no differences, doesn't matter if the program is a region or Brahman or Hindu or Muslim, we don't care.

We are inclusive in every way possible. Information is for everybody. Today the kind of discussion that goes on in India is so very petty. We really need to raise the level of conversation in India.

I am doing a book right now, I did a book on my life a few years ago, and I did that for my granddaughter, because my granddaughter who is now six and lives in San Francisco, someday is going to grow up and ask, "Who was this old man who came to America 100 years ago, 75 years ago?"

And whatever her father, who is born and raised in US, tells her is going to be very different, because her father has no idea of the kind of poverty I came from. He cannot even comprehend that I was born in a small little tribal village in India where my mother delivered eight kids all at home. No doctor, no nurse, no hospital, no pharmacy, nothing. No schools. And even if I tell them this, they'll think Daddy's making it up.

This cannot be reality. It is that India we have to change. If we don't use technology to lift 400 million below poverty line to something respectable, we haven't done our job.

We don't want to build an India where there are more billionaires. If there are, more power to them. I have nothing against them. But I want to use technology to transform everything in India, and that can only come from knowledge.

That can only come from people like you. That can only come from openness. To me, information brings about openness, access, accountability, network, democratization, decentralization. All of these things are Gandhian.

If Gandhi was to arrive today, he would be so happy to meet you. I'm giving a talk the day after tomorrow at Ahmedabad. This is, in fact Carl and I spent last year, October 2, at Sabarmati Ashram, and we tried to really focus on spreading

Remarks of Dr. Sam Pitroda

Gandhi's ideas in the information age, and tell people that connectivity, how Gandhi is more relevant today than ever before in the history of mankind.

I lost track earlier while I was telling you about the second book. I'm writing a book about redesigning the world. The world that we have designed today is completely obsolete. The last design was by US after World War II. UN, World Bank, NATO, IMF, GDP, GNP, per capita income, balance of payment, democracy, human rights, capitalism, consumption, and wars.

All of these things don't make sense anymore. GDP don't mean a damn thing. But we still follow it. All of the measurements today can benefit from big data, cloud computing, analytics. Then it was not possible, so you said gross domestic product and everybody agreed. Today you can go and zero in on so many little details because you have huge data to analyze.

I'm so happy that someone here is taking all the data from the court, putting it on web. I fought for seven years with all of our chief justices. Every new chief justice appointed, I will call him next day, go to his house. We have tea and try to convince him that why does it take 15 years to get justice? Why can't we computerize all your reports and get justice in three years? And he would say, "Yes, Sam, we agree with you, Mr. Pitroda, we are all with you, terrific idea, let's do it." And then nothing will happen.

And in eight months, there will be new chief justice. So I go to him again. And he will say, "You are so very right, we are going to do it this time." With all good intentions. They mean well. But they can't do it.

Why does it take 15 years to settle a court case in India? With all the expertise you have, it can be done in a year, maybe two, maybe three. So you need to use IT everywhere to transform. You are here to transform the very fabric of this society. From homes to work to police to court to government to education to health services, agriculture, and your tools are basically information, information, information. To information, add knowledge, wisdom, action, and courageous young people to go do something.

In India you can write off anybody who is above probably 45, including me. They are just not equipped to handle this world. Everyone in India talks about the past. Nobody talks about future. It's all about Ram's history. Immediately somebody will talk about Hanuman, someone will talk about another god, all will say this was our heritage.

Nobody talks about future. Our heritage is important. We are proud of our heritage, of our art, our culture, our music, and we are trying to computerize a lot of that.

About 15 years ago, we took one million manuscripts and digitized it. 15 years ago. 40 years ago, 37 years ago, we started at the Indira Gandhi Institute with Kapila Vatsyayan, storing all of our art on microfilm. All of this stuff is now coming to a point where it makes sense. Earlier we didn't have the right tools. Now, storage is cheap.

Just to give an idea, I bought 16-bit RAM for $16. I hope that makes sense to some of you. I bought four-input NAND gates for $37 each. When first microprocessor was designed by Intel, I was there. All the Intel founders are friends of mine, Bob Noyce, Lester Hogan, Gordon Moore. The first four-bit processor, I used it for telephony.

And we thought that was a miracle. And we thought, "My God, what a powerful tool."

And look at what you have today. You are sitting with gigabits and terabits and so much processing power just in your cell phone, and this is changing India. But it has to change in the way you want it to change, not in the way somebody sitting in US wants this to change. We need local content, local applications, local solutions, Indian version of development and not Western version of development.

It's too bad that everybody wants to be like US. That model is not scalable, sustainable, designable, or maintainable. We need to create Indian model of development, and that's where Gandhi leads.

So while I was talking to some young people here, I said, "Can you get me data set for every district?" What I want is for every district, everything should be available online. Court cases, police, teachers, schools, hospitals, doctors. I don't care about Indian national databases. Of course it's important, I'm not saying it's not important. But I want work at district level. At district level if I have need for 500 teachers, I don't need to go to Delhi to ask, "Where do I go hire?" I need to hire them right there.

We need to decentralize everything. Today, power in India is in two places. Prime minister, and chief minister.

Remarks of Dr. Sam Pitroda

I had a meeting this morning with the mayor of Bangalore, and I said, "Look. First thing we should do is give more power to mayor." Mayor has no power in India. Nobody knows who is mayor. They are mayor only for a year. Funny. In a year, you don't even know where to go to the bathroom. You need three or four years to figure out what you are supposed to do. But the reason behind one year is, we don't give you time to figure it out. So we can do whatever we are doing, and that's the way it is. So I told him this, push to get mayor five year term. Same thing in district. District head is who? Collector. There is no electorate member at the district level. Why can't we have district level developmental model through all the stuff you are doing, to really decentralize?

I don't want to take too much of your time, but I have lots and lots of ideas that I want to share with you, I want to remain connected with you. I am indeed very proud of what you are doing, I want to be of help. I am obsolete, I know that, I recognize that, I respect that, but I still want to work and be busy. So I start every day at eight o'clock in the morning and I work to 11, 12 every day, Saturday, Sunday, because that's the only thing I know how to do. I have no holidays, I've never taken a vacation in 50 years, because there is just too much work out there in India. It's better to be busy than go on a beach and have a drink. That doesn't excite me.

And it's good to see so many of you on Sunday afternoon. And I really, really appreciate your coming to Sunday afternoon, because that's the only slot I had available. So I told Carl, who's a friend of mine, and Carl is an interesting character. I don't know whether you know of Carl, but you should Google Carl. Carl is a very close friend of mine, he and I do all kinds of crazy things.

We just launch in San Francisco, along with Brewster Kahle, this Internet archives where he took 450 thousand books from India and put it online. Government of India panicked and said, "Wait a minute, how could you do that? It's still copyright." We said, "Don't worry. They sue us, we'll decide. We'll worry about it." Because government of India is not going to tell us what to read, what not to read.

And you need people like that, globally, to confront the system. Carl and I decided once to take all the Bureau of Indian Standards and put it online. I don't know if you know Bureau of Indian Standards costs 14 thousand rupees in India and 1.4 lakh for foreigner. These are our safety standards, fire standards, these are our laws, and as a citizen you have no access to it but you are supposed to follow it. Funny thing.

And when you put it online, government says, "Oh, wait a minute, you can't do it." The answer is, tough luck. We're going to do it.

And that's the attitude I want you guys to have. I want you guys to have fighter attitude. Don't get sucked into it. Don't let anybody tell you you can't do it. Fight it like Gandhi fought.

The difference is you are fighting your own cousin, and that fight is tougher. So I wish you all the best, thank you for giving me this little slot.

I look forward to hearing Carl, and then we'll have a broader conversation. I know I was given 15 minutes, maybe I took five more, but where would I get audience like this? Love you.
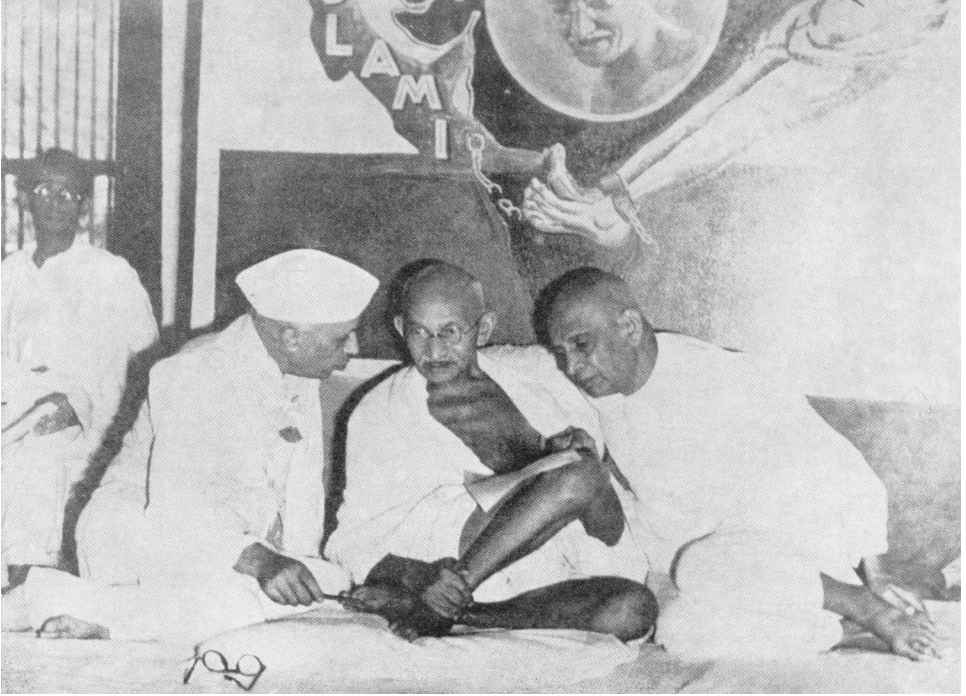
CWMG, vol. 84 (1946), p. 161, With Jawaharlal Nehru and Sardar Patel.

CWMG, vol. 86 (1947), p. 224, Over a Bamboo Bridge Across a Lagoon.
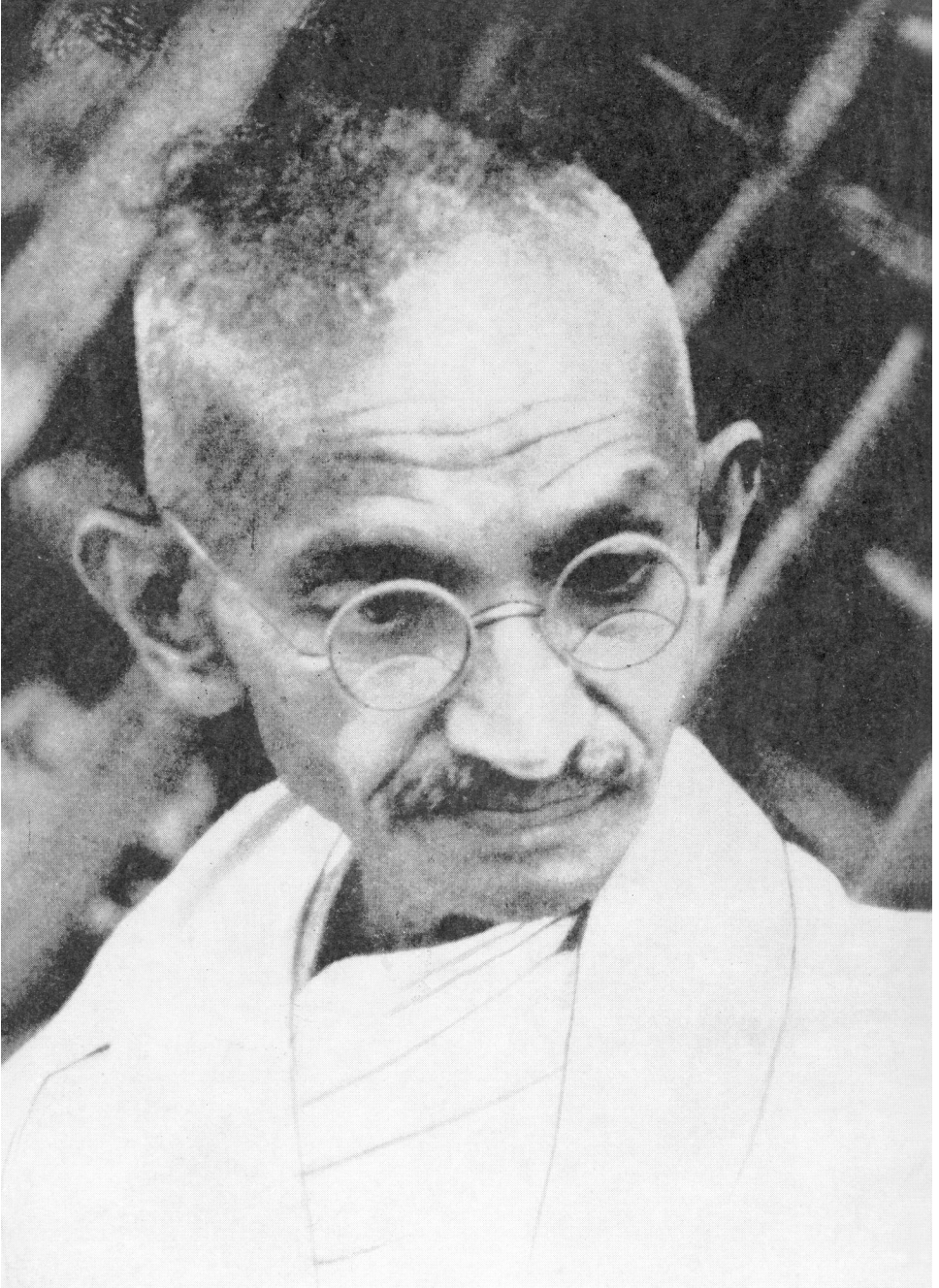
CWMG, vol. 38 (1928–1929), Frontispiece.

CWMG, vol. 86 (1946–1947), Frontispiece, Caption Reads "Ekla Chalo."
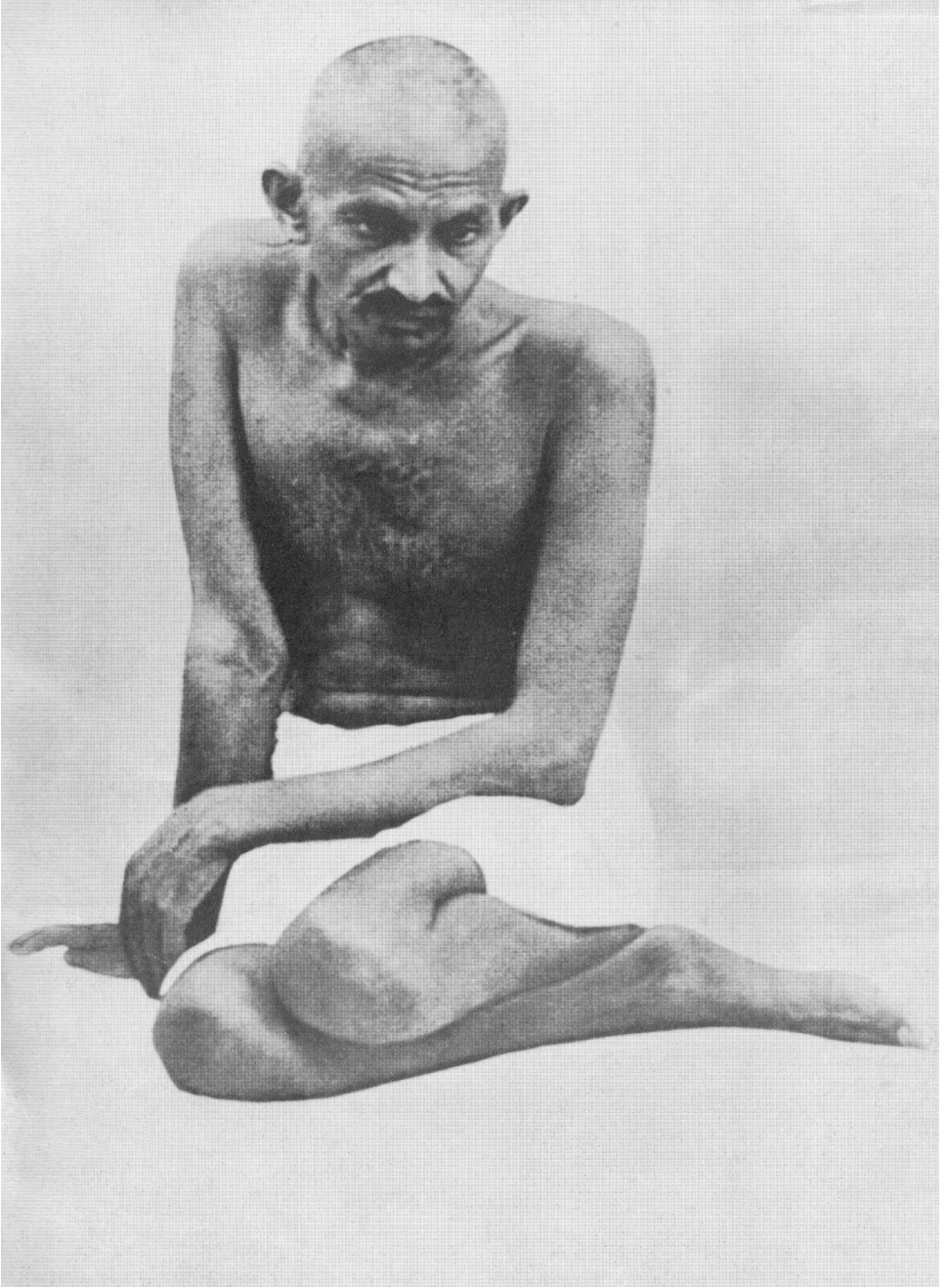
CWMG, vol. 100, Frontispiece, Gandhi in a Contemplative Mood, Sabarmati Ashram, 1931.

Right to Information, Right to Knowledge: Remarks of Carl Malamud

HasGeek Geekup (Public Lectures By Visiting Geeks), NUMA Bengaluru, October 15, 2017

Well, thank you, Sam. Can you hear me? Good. This is a beautiful facility.

I want to thank NUMA for hosting us, and especially, HasGeek, for organizing this event. Sandhya Ramesh, especially, has done a wonderful job of coordinating things. Thank you, Pranesh, for that very nice introduction, and Srinivas and T.J., for your very instructive presentations. And, of course, Sam, for dragging me to India again.

It's a great pleasure to be here.

So, I have a strange profession. I am a public printer.

You may have heard of private printers, right? They do novels, in Hollywood, and they publish things.

Public printing goes back many, many years. There was a public printer, named Ashoka. The Emperor, the dearly beloved, who took pillars, and edicts of government, and spread them throughout India. He did this so people would know the law, and the Dharma, that they knew that animals should be treated properly. That different religions should be properly tolerated.

In Rome, a couple hundred years before that, the people rebelled against their rulers, and said, "You have to write the laws down. You can't simply make them up every time we go to court." They took the 12 Tables of Roman law, and they inscribed them in bronze, and in wood, and they put them in every marketplace in the Roman Empire, so that people would know what their laws are.

That's because public printing is something that belongs to all of us. It's different than private printing, where you do something to make some money, and then, maybe 70 years later, or in this day and age, 150 years later, it enters the public domain. But public printing is stuff that we all own. And I've been doing this for 37 years in the United States, everything from cultural archives to the law.

I put 6,000 government videos, that the government has, online. We copied them, put them on YouTube, 50 million views. The stuff was just sitting there.

The Securities and Exchange Commission, it cost $30 to get the report of a public corporation, to get their IPO report, for example. We put it on for free, well, hundreds of millions of people access that information.

About five years ago, I started working on Indian data. I continue to work in the U.S., but U.S. and India are the two places I do my work now, and I maintain five collections.

First, photographs: the Ministry of Information has this huge collection of photographs that are online, but they're hidden. You can't find them. You pull up an index page, and there's a thousand photos on there. You have to click through to get the actual photo. So I harvested those, took 12,000 photos, slapped them up on Flickr. These are amazing things. This is, pictures of Nehru from '47 and '48 and 49, pictures of the Republic Day celebrations over the years, a thousand photos of people playing cricket, Olympics, animals, the temples of India—just beautiful stuff. There should be much more of this, and it should be higher resolution.

Second, the Bureau of Indian Standards: the building code of India, 14,000 rupees. Every engineering student in India, 650,000 every year, need to consult this document, and they had to go down to the library, and consult the one CD-ROM. Or go to the library, and get that one book. We put that online, and we get millions and millions of views every month, on those.

And, in fact, we have not been sued by the Indian government. We've been sued in the United States and in Europe, by various standards organizations, but the Bureau of Indian Standards refused to sell us more. And the reason is, because I sent them a letter. I paid $5,000 a year to get the standards, and I ran it for a couple years, and they sent me a renewal notice. I said, "Sure, I'd love to renew. And by the way, here is all the standards, aren't they great, can I give you the HTML?"

Because a lot of these standards, we sent in to India, retyped them into HTML, redrew the diagrams into SVG, coded the formulas into MathML. So you can see it on your cellphone, you can take a diagram, you can make it bigger, you can paste it into your document.

Remarks of Carl Malamud

Now, we're suing the government of India, in public interest litigation. Srinivas Kodali is one of my co-petitioners. My friend, Sushant Sinha, who is also here, who runs the amazing Indian Kanoon, a service of all the court cases, is my co-petitioner. Nishith Desai and Associates is representing us for free, in the High Court of Delhi, and Salman Khurshid is our senior attorney on the case.

We are before the judge again, in November. It's all papered over, the Union Government has failed to respond, for the fourth time. We are hoping to get an oral argument, and win this case, because in India, the right to government information is constitutionally-based, and these standards are government documents that have the force of law.

Third is the collection, Srinivas talked about it, the Official Gazettes. We're just starting on this one. We've got the Gazettes of India up. I've got Gazettes now for Karnataka, Goa, Delhi, and a couple more, kind of ready to start uploading, and we're looking around, trying to figure out how to get the rest of them.

Collection number four is Hind Swaraj. I went to see Sam one day, and he goes, "You got a stick?"

"What?" So, I pulled out a USB drive, and he sticks it in his computer, and he hands it back to me about 15 minutes later, and I said, "What is this?"

He responded, "the Collected works of Mahatma Gandhi, all 100 volumes, 50,000 pages." I said, "Well, where did you get this?"

"Oh, the Ashram gave it to me."

"Well, what are they going to do with it?"

"They're going to put it on a website," Sam replied.

And so, I looked at it again, and asked, "well, can I put it on a website?"

"Go for it!" Sam said confidently.

"Won't they be annoyed?"

"No. Nobody's going to care."

And so, I put them online. I also decided, since we were doing that collection, all 100 volumes—and you can search inside of them, and you can download them as an e-book—I went to another government server, and I found the selected works of Nehru. But they were missing three volumes, so I got all those, found the other three volumes. Those are online.

We now have the most complete collection of the works of Nehru. The complete works of Ambedkar. Dr. Ambedkar was on the Maharashtra server, but again, they were missing the six most current volumes. I took the docs off the server, bought the remaining volumes, and we now have the most complete collection of the works of Ambedkar, again, on the Internet archive, in the Hind Swaraj collection".

There are also 129 speeches from All India Radio, of Gandhi-Ji speaking. The last year of his life, every couple days, he would speak after a prayer meeting. So you can actually listen to him speak, in the last year of that amazing life. You can then go into the collected works, and see the English version of that speech, and then, you can go to the next day, and see the letters he wrote, go see the next speech he gave. It's an amazing walk through his life.

We went to the Doordarshan Archives, and posted Bharat Ek Khoj, the Discovery of India as told by Nehru, a series from the 1980s. All those episodes are now online. For several of those, we've added subtitles in Telugu, in Urdu, and we have five languages available as subtitles. We'd like to do the whole thing that way.

But I want to talk about the Digital Library of India, because that's the current hot button that we're working on. So, there was this government server, that had 550,000 books. At least, that's what they said they had.

A year ago, I was sitting with Sam, and we had just finished our one week hectic barnstorming tour of India, and we were waiting for our late night flight to go back to the United States, and I was sick. Sam was doing a million meetings, people coming to see him, and I was looking around, and I found this Digital Library of India thing.

I looked at it, and it seemed like it was harvestable. The books were there. It wasn't very convenient, so I wrote a little script, and it worked. Then, when I got home, off the airplane ride, I went back to my server, and sure enough, we had collected some books, and for the next three months, I started grabbing books.

Remarks of Carl Malamud

It took a while. It was about 30 terabytes of data. I ended up with 463,000 books that I was able to successfully get. Some of them, I couldn't get, some of them were broken URLs, but we got 463,000 PDF files.

This was December of last year [2016], and in January, I did the upload of the Internet Archive—and these things take awhile, when you're doing that much—and uploaded them. So this collection, when I started looking at it in more detail, because I couldn't really tell, until I actually had the data.

This is books in 50 different languages. There are, I believe, 30,000 books in Sanskrit. There's tens of thousands of books in Gujarati, and Bengali, and Hindi, and Punjabi, and Telugu—you name it, it's all there. About half the books are in English and French and German, but it's a unique collection.

Now, it had problems. When I went to mirror it, the server kept spitting out code 500 system errors. It kept breaking, and so, my scripts kept breaking. I'd go back the next day, and I'd start the scripts again, and I'd be able to get some data, and then, they'd lose DNS. Their DNS servers kept going down.

And so, you'd ask for a DNS name, and it'd say, "Host Not Found," and so on. I started hard coding the IP addresses, because that was the only way I could grab the docs. There were other issues, besides poor hosting. The metadata is kind of a mess. Many of the titles are broken. The scanning, some was good, some was not.

There's a lot of duplicates in there, but it's still, it's a unique collection. I also noticed that there were some books that seemed somewhat adventuresome on copyright. I looked at it, and said, "Well, you know, some of these are pretty recent." But I looked down at the copyright field, and, "Not Copyright." So, I said, "Well, they must have known what they were doing."

What I do on archives like that is, we put them online, and if people start complaining, you say, "Okay, fine, I'll take that stuff off." So I put it online, and it went online in February of this year. We've gotten, I think, eight and a half million views on this collection, so far.

So this collection went online, Google started seeing it, people looked at it—we had half a dozen people write to us, and say, "Ah, you've got my book there!" You know, standard DMCA takedown in the United States. Not a problem. Fine, we'll remove the books.

University of North Carolina Press wrote to us. They had a list of 35 books, and it was a very nice note, that said: "Look, we didn't mind that you had our books online before. But we're starting to put our backfile online, and sell it. So we'd rather that you didn't have them."

So we looked at their list, and then, we searched in our database, and found a few more books that they hadn't found—wrote them a nice note, and said, "Here we are. If you have anymore problems, let us know." In total, we took about 127 books off. Not a big deal.

Now, there was a guy in Russia, who found his father's book on the Internet Archive, and he knew one of the professors that was involved in this Digital Library of India, and he freaked out. He was going to sue. He just got very, very angry, and in return, the professors that had started this project, all very senior people, freaked out as well, and they went to the government, and the government got all upset. And I started getting all these notes saying, "You must delete all the books. You must get rid of them."

I was like, "No, we're not going to do that," and then they actually took their server down. So we now have the only copy of the Digital Library of India on the Internet. I've actually renamed it, because they were worried that it looked like we were somehow affiliated with them. I said, "Okay, fine. We are the Public Library of India." So they removed their—first, they removed all the books, so you could search for the metadata, but you couldn't get the book.

Then, they took that down, and there was this obscure notice saying, "Due to copyright violations, this is not available. Come back soon." And then, the metadata became available again, and then, the server disappeared altogether, and the copyright notice came back. And now, it's still gone. It's just, it's off the net.

And what I understand is happening is, a team of government officials has spread out to these 10 different libraries, these scanning centers, where they got the books—and they're going through the list, one by one, and they're deciding which ones will be available, and which ones will not. They told us that they will notify us which books should be available.

When they first freaked out, I went and looked at the system a little more. My initial feeling was that we wouldn't remove anything, and I said, "No. We're not removing one million views per month, 500,000 books. We're just not going to do that."

Remarks of Carl Malamud

They said, "Okay, remove everything after 1900." And that would have left us with 60,000 books. I said, "Why 1900?" They just made up the date. And so, at first, I said, "Okay, fine, I'll remove everything after 1923," and that left me with 200,000 books.

I then went through the remaining 250,000 books that I had, and I looked carefully at that list. Many of them were Official Gazettes. Or they were the works of Mahatma Gandhi, which we know does not have copyright. Or they were other things.

And so, after looking at this list carefully, I brought it up to about 314,000 books, which is what you can see now. They still want to tell us to take everything offline, and I just don't think it's the government's job, to tell you what to read, and what not to read.

There's something even more important: copyright is not a binary thing. For example, all of those books, I could make available to somebody who is blind. Because there's an international treaty, that says that copyright does not apply, when you make books available to the blind. It's one of the more progressive things in copyright law. At some point, there will be no copyright, because copyright expires. I have no idea when that'll be. So we're certainly not going to delete them, because, eventually, we can make them available.

You may be familiar with the Delhi University case. The Delhi University case cited the Copyright Act, that says, you can make it available in an educational setting for teaching, between a teacher and a pupil. So we could make all of these books available within a university campus.

Deleting the books is not the right answer. Managing the metadata, making it better. Working on translations. Doing better OCR, because we can OCR some languages, but others, we can't. Making it better. Responding to copyright issues.

One of the things with the DLI server, when it was online, I actually tried writing them, when I first started to mirror the thing. I didn't get any answers. When the distinguished professor finally came to me, he said, "Well, you did this without talking with us." I said, "Look, this data's been spinning since 2015.

We just assumed nobody was home. We assumed nobody was there. I would have loved to talk to somebody, but nobody would talk, and that's why I just went ahead and grabbed it."

Not only that, these are books. Once it's on the Internet, I can't hack your server, but if it's public data—and public data is something run by the government—then I have a right to take it, and look at it. Now, I obviously bear responsibility, if there are subsequent copyright issues. But we're ready to deal with those. So that library is online.

Now, you may ask, "Why does this stuff matter? Why do you need public printing?" Well, the world right now is in disarray. I don't know what your feelings are about the world now, but inequality of income has been growing, poverty, disease, hunger. India has a surplus of food, 200 million people don't eat.

We can solve those problems. Climate change, these crimes against our planet. As you can see from global warming, this is not some far-fetched idea, this is real. This is science.

Intolerance. Violence against people of other religions. Violence against people of other ethnicities. Violence against women and children. Intolerance. Intolerance against ideas. The horrific shooting of Guari Lankesh, in Bangalore.

Fake news? Nazis, getting on Facebook? Coming up with fake stories, helping elect our President, in the United States? And the question is, what can you do about something like this?

I believe that every generation, every point in time, has an opportunity. If you're technical, and it was the early 1960s, you'd be like Sam. You'd help invent the digital phone switch, or invent computers. If you were in the 1950s, you might have been working in aerospace. Same goes with social issues. There are things we can do. If you were living in the 1880s, you would be battling against involuntary servitude. You would be following Gandhi.

I believe that our opportunity, the unmet promise, is universal access to knowledge. It's something we can do. We can make it happen, and the reason that matters, is because a democracy is owned by the people.

The key to democracy is informed citizens, and so, I believe the key to change—you can't solve global warming today, but if we all understand what's

going on with our environment, I believe we will start to take actions. So I believe the key to change is two things. Gandhi told us that one of the keys to change is love. When you see the Nazis, you don't go beat them up. One of the things I don't like about the current debate in the United States is, we have the alt right, right? And then, we have people saying, "Let's beat up Nazis."

Well, that's not the answer. Gandhi and King both taught us that love is the answer. But they also taught us something else, which is that if we want to change the world—that we're invoking Justice Ranade here—if we want to change the world, we must educate ourselves, and educate our rulers.

Both King and Gandhi, before they committed satyagraha, they spent an intense amount of time educating themselves, and then, educating their rulers. Before Gandhi left for Dandi, he spent a month in that Ashram, training himself, and his fellow marchers. He sent petitions to the government, saying, "I am going to do this," and so, I believe education, as well as love, is a key thing. Rabindranath Tagore felt that way, as well. When Gandhi tried to remove basic education, because he didn't like the British schools, Tagore published his Call to Truth, and he said, "Our mind must acknowledge the truth of knowledge, just as our heart must learn the truth of love." Right? You have to do both.

And so, I believe that knowledge is the answer to fake news. You don't solve fake news by censoring it, because you can never do that. But you can have better news. You can have true news. If we want to solve the problems of economic opportunity, we have to help, it can't happen just by itself.

Gandhi was a big fan of what he called "bread labor." That comes from a Bible quote, and for him, bread labor at first was printing.

When he went to the Phoenix Ashram, everybody had to use their printing press. Every day, everybody did manual labor with the printing press. Later on, it was the spinning wheel. Well, today, Gandhi would say that coding open source software every day is bread labor. It really is. It's manual labor, and it makes your world better. You're making something real.

The other thing that Gandhi taught us is about public work. That we must spend part of our time—it's fine to have a business, it's fine to make money, that's good. But we also, if we want to own our governments—which we do, in a democracy—we have to be part of it.

On the front of every one of the Standards that I published, there's a cover sheet. It's got elephants, and it's got logos, and other ornaments. But at the bottom is a quote from the Niti Shatakam, and it says, "Knowledge is such a treasure, which cannot be stolen." And I totally agree with that. Knowledge has to be shared, and I think that's our opportunity. So thank you very much. I think Sam and I'll take questions now.

CWMG, vol. 87 (1947), p. 193, Morning Walk with Abdul Ghaffar Khan.

CWMG, vol. 90 (1947–1948), p. 449, Arriving at Prayer Meeting.
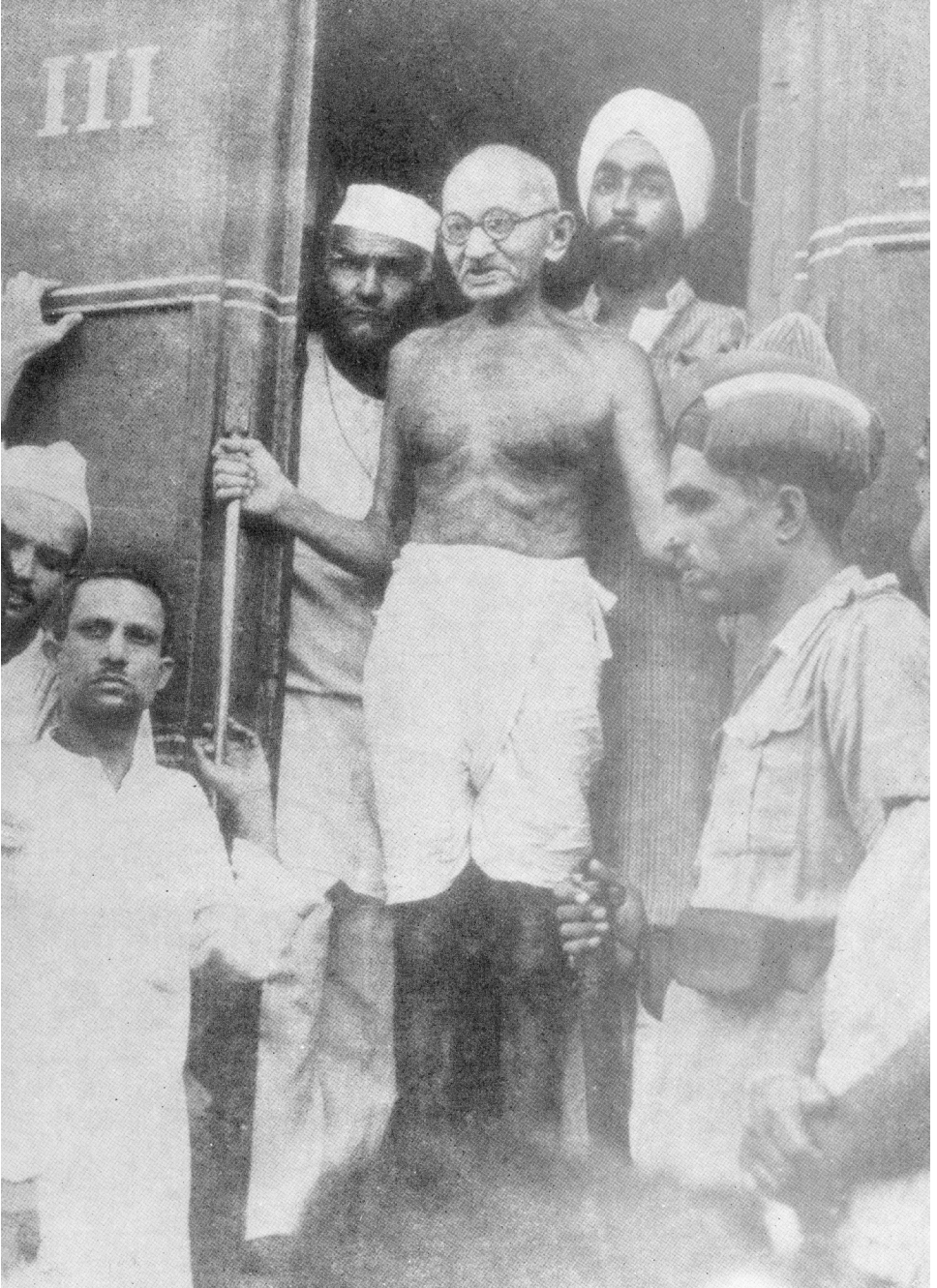
CWMG, vol. 88 (1947), Frontispiece, At Lahore Railway Station, on way to Kashmir.

CWMG, vol. 13 (1915–1917), Frontispiece, On Arrival In India, 1915.
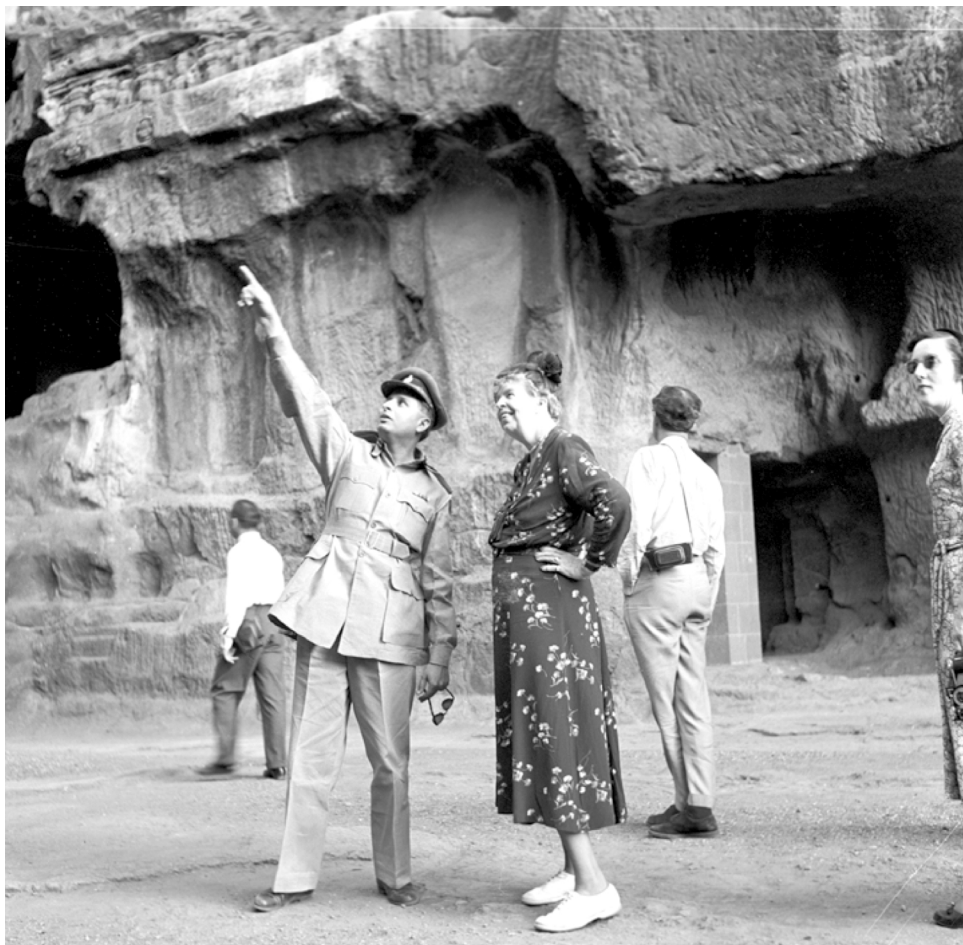
Mrs. Eleanor Roosevelt being conducted round the Ellora Caves, which she visited on March 9, 1952.

Mrs. Eleanor Roosevelt being received on her arrival at the Mysore Airport by Shri H.C. Dasappa, Mysore's Minister for Finance & Industry.

Mrs. Eleanor Roosevelt at one of the laboratories of the Central Food Technological Research Institute Mysore which she visited on March 7, 1952.

Mrs. Eleanor Roosevelt going round the Maharani's Girls School, Jaipur, which she visited on March 13, 1952.
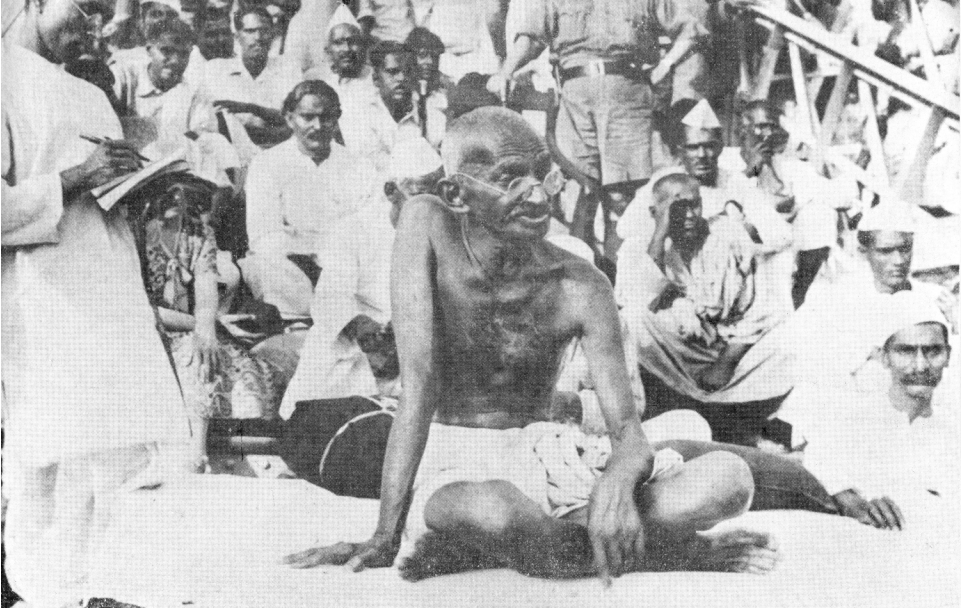
CWMG, vol. 57 (1934), Frontispiece.
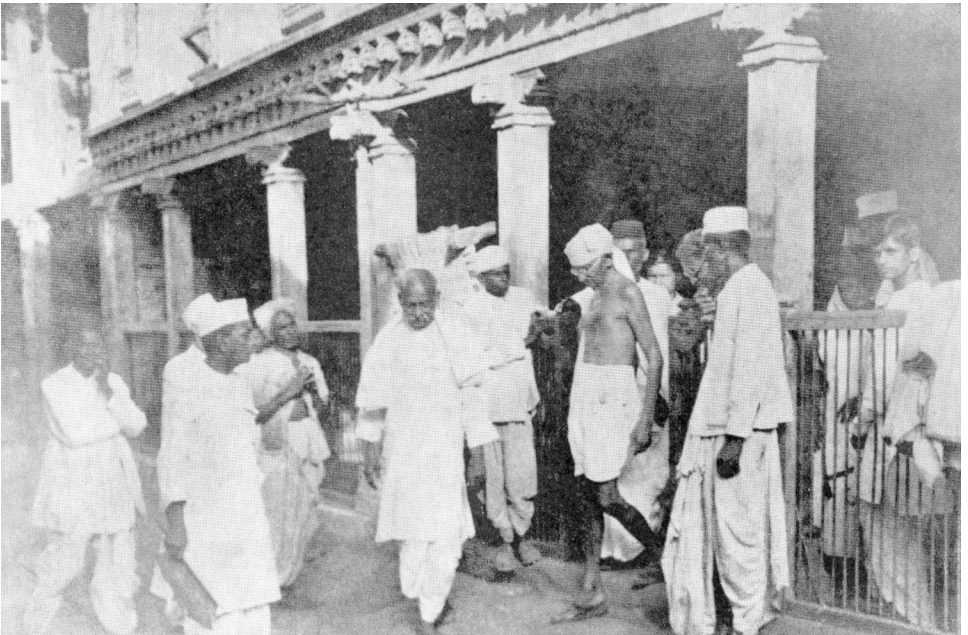
CWMG, vol. 61 (1935), Frontispiece, Visit to Plague-Stricken Village, Borsad.
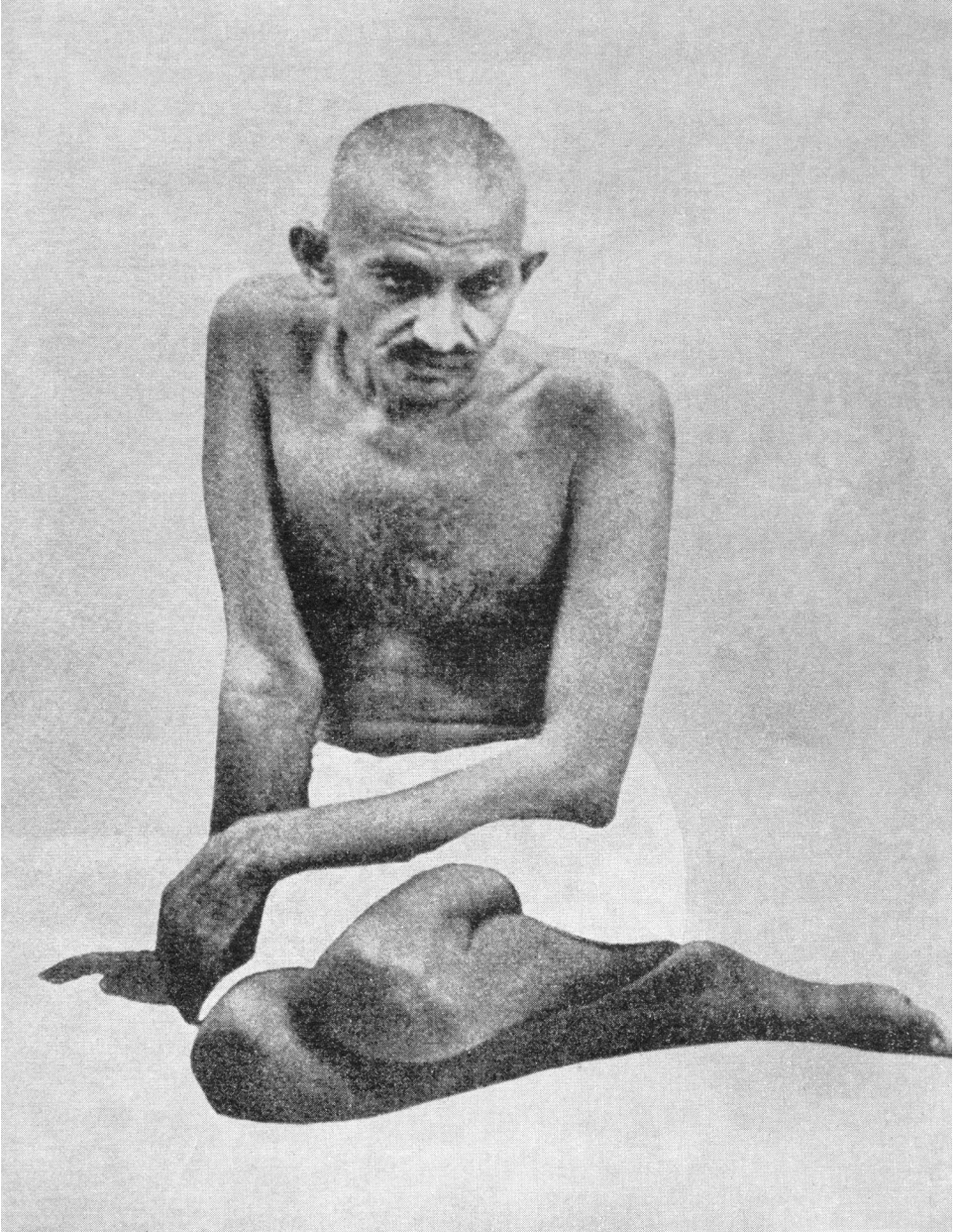
CWMG, vol. 24 (1924), Frontispiece, Gandhi-ji in 1924.

Interview: 'This Little USB Holds 19,000 Indian Standards. Why Should it Not Be Made Public?'

The Wire, Anuj Srivas, October 26, 2017 (Used With Permission)

An interview with Carl Malamud, founder of Public.Resource.Org, on his legal quest to make the codes and regulations notified by the Bureau of Indian Standards available to the public for free without any payment.

[Anuj Srinivas] Hello, and welcome to The Wire's discussion today on making public information available to everyone. My name is Anuj Srinivas, and today our guest is Carl Malamud.

Carl has been described as everything from the Internet's own instigator to America's unofficial public printer. Carl's mission, over the last 25 years, has been to use the Internet to make publicly accessible or available information more accessible and more available to everyone possible. Over the last ten years, a lot of his work has centered around legislation, legal code standards, and so on and so forth. More often than not, this brings him into confrontation with government authorities who would like to regulate or disseminate this information in a very selective manner.

Thank you, Carl, for joining us and being here today.

[Carl Malamud] My pleasure, my pleasure.

[Anuj Srinivas] For our viewers who are not familiar with your work, could you walk through what it is to make information that is supposed to be public, in a more public fashion, available to the people.

[Carl Malamud] Well, the information I deal with is information that most people agree should be public, but for some reason is not. It's locked behind a pay wall because of inertia, or the government agency is not technically able to handle the problem, or somebody wants to be the vendor, wants to be exclusive. What I look for is large databases, like the US patent database. In that case, I bought all the data. The patent office was selling it. It took a few hundred thousand dollars, which I was able to raise. I bought it, I put it online, millions of people started to use it, and I went knocking on the patent office's door and said, "You know what, this is your job. You should be doing it."

That's always my goal, is not to put myself in the patent business or another business; it's to make government better, to show them that people actually care about this information. With the patent database, the patent commissioner actually told me he just didn't think ordinary Americans would care about this stuff. Put it online; millions of people started using it.

[Anuj Srinivas] In some cases, this information for example, is available to the public; but for a fee, for instance. How do you deal with that when it comes to the government agency that makes money off of it?

[Carl Malamud] Well, revenue is very important for any government agency, any NGO. In the case of the patent office, they were making $40 million a year selling patents. You know what, the whole purpose of patents—This is the only database that's specifically called out in the United States Constitution. It's not there to be sold. They can make money doing other things, and they can actually sell the data. The question is, once I've bought it, am I able to re-publish it in a way that makes it better and more useful? I don't even mind if there's a fee for service for information. The question is are you then allowed, without a license, to use that information, make it better, inform your fellow citizens, do something with it?

[Anuj Srinivas] Correct, that's true. Some of your work here—Your work has also extended to India over the last couple of years. As I understand it, you're currently, for instance, in a legal battle with the Bureau of Indian Standards. Could you talk to us a little bit about this, and how it started from the beginning?

[Carl Malamud] There's a couple kinds of laws, right, legal materials. Edicts of government, there's acts of a parliament, there's government regulations; but safety standards are some of the most important laws in our modern world. The National Building Code of India, the Standards for Textile Machinery that keeps workers safe, or the safe application of pesticides. All these Indian standards are noticed in the official gazettes. They have the force of law. In many cases, you may not sell products in India unless they are certified; and they may not be certified by BIS unless they meet standards. And they're all government publications.

Despite that, there is not only a copyright notice, there is a notice that you may not copy this stuff without our permission; and they sell it. The National Building Code of India costs 14,000 rupees in India. That's a lot of money for a book that every engineering student in India needs to study. If you buy it in a

foreign land, it's costs 1.4 lakh rupees, ten times as much. If you want to do business with India, you need to know what the safety laws of India are.

[Anuj Srinivas] Correct, right. Correct. In 2013, you took some of this data and made it public; but the BIS didn't appreciate that.

[Carl Malamud] Well, BIS didn't notice. What happened at first is I purchased a number of Indian standards. One of the things I do is I don't sneak around. I don't hide. I called Mr. Sam Pitroda, who was in government at the time, working for Manmohan Singh; and said, "Pitroda-ji, I'd like to come see you." I went and saw him, and I brought copies of standards. I explained the situation and said, "I'm going to put these online. What do you think?" He goes, "Puh, this is good." I said, "Well, you know the Bureau of Indian Standards might be annoyed." He goes, "This is important information. It should be available." They didn't notice. I took all 19,000 standards. I put them online. I paid $5,000 a year for the DVD. Then, it came time to renew my subscription.

[Anuj Srinivas] Sure.

[Carl Malamud] I sent them a letter. I said, "Yes, here's a purchase order. I would love to renew my subscription. By the way, here's all the standards, and we've taken 971 of them, and we've transformed them into HTML. We've redrawn the diagrams as SVG graphics. We've recoded the formulas as MATHML. Would you like copies of all that information?" I got a letter back saying, basically, stop, you must stop immediately. They refused to renew my subscription. They demanded we take them down.

I sent them a letter back, and I explained why, in my belief, under the Indian system of government, under the Indian Constitution, under the Right to Information Act, this was public information. They disagreed. We petitioned the ministry, that's the next step. Big fancy petition. Pitroda did an affidavit. Vinton Cerf, father of the Internet, did an affidavit. A number of very prominent professors of water engineering and transportation signed affidavits. We had examples of why the standards looked better, why we were adding values.

It went up to the ministry, and after a while we got an answer back. "No, you can't do it." The next step is a public interest litigation suit. Along with my colleague Srinivas Kodali, who is a very talented young transportation engineer and Dr. Sushant Sinha, who does the amazing Indian Kanoon. We filed suit. The law firm of Nishith Desai agreed to represent us pro bono. They're not charging any money. Salman Khurshid, former Minister of Law, agreed to represent us

pro bono as our senior advocate. We are in front of the Honorable High Court of Delhi in New Delhi.

It is papered over, in the sense of BIS has answered our complaint. We responded. The union government has failed to respond. We're before the court again in November 13th, and our hope is that the chief justice, or the judge who is presiding, will order an oral argument early next spring. That we will have our day to state our piece, the government will state its piece; and the government will render a verdict.

[Anuj Srinivas] Sure. Carl, as I understand it here, BIS's defense rests on copyright for one. Another thing that it also talks about is the fact that it needs to be compensated for creating these standards. One of the differences between the United States and India is that in the United States, standards which eventually become law and regulation are formulated by private bodies. Here in India, the BIS is a statutory body that sometimes—I would say most of the standards it comes up with, eventually, assume the force of law. To a certain extent, its revenues come from selling these standards to companies, to colleges, to private individuals. Are you opposed to BIS's revenue model as well? Do you believe that in this day and age, it needs to be made public, and we shouldn't worry about the cost that went into creating those standards in the first place?

[Carl Malamud] Let's deal with India, and then let's deal with the rest of the world.

[Anuj Srinivas] Sure.

[Carl Malamud] In India, these are government documents. Less than 4% of their revenue comes from the sale of standards. If you want to sell a product in India, it has to be certified. Do you know who you pay for the certification? Bureau of Indian Standards. They get plenty of money. Not only that, this is vital to their mission, right. The public safety. By rationing access to standards, you are not educating engineers nearly as well as you could. You are not allowing local officials to enforce the building code the way they need to, because they have to spend 14,000 rupees in order to purchase one of these things. Rationing access to public safety information runs counter to their mission, and they don't need the money. They have money coming in from other places.

Now, the rest of the world has private NGOs develop the standards, and then government adopts them into law. Let me say a couple of things. The NGOs

want these to be the law. That is the entire purpose of the National Electrical Code of the United States, and they boast it is the law in all 50 states and the federal government. They want that. They sell it for a lot of money; but you know what, again, they have certification and handbooks and training. When the federal government says the National Electrical Code is the law of the land, they get the gold seal of approval of the American people; and they ought to be able to monetize that gold seal without rationing public safety information. They claim they need the money, but I don't think that's the reason. I think it's a matter of control.

I think it's the way they always did it, but you know what, the Internet has forced every industry in the world to adjust its business model. Time makes us adjust our business models. Selling a standard for a reasonable amount of money in 1970 made sense. Selling a building code, a book, for 14,000 rupees in this day and age. This thing, right. This little USB, this is all 19,000 standards. This is the whole thing. There's no reason this shouldn't be available for every student in India, at least on a non-commercial basis for education; but I think it ought to be available to every industry and every local official, because that's how we enforce public safety. Everybody knows the law.

[Anuj Srinivas] Correct, correct. Carl, part of your mission, part of the work of many other public domain advocates, is not just that this information needs to be made accessible for free and so on and so forth; but also the quality of access. For instance, you know the documents need to be—You should be able to zoom in, or should be a more aesthetically pleasing format that people could actually use it for research. A little bit of that work extends to your Digital Library of India, and the kind of work that you've been putting in over the last two years. Could you elaborate a little about that?

[Carl Malamud] Well, for the standards, we retyped many of them into HTML, including the building code. We redraw the diagrams, recode the formulas. The Digital Library of India, they claimed it was 550,000 books up on a government server. Long term program scanning books all over India.

[Anuj Srinivas] And they is?

[Carl Malamud] The government of India, the government of India. The Ministry of Electronics and Information Technology is the sponsor of this project. I noticed this Digital Library of India, and I looked at it. I saw two things. It wasn't very accessible, right. It was hard to search. The server kept going down. They kept losing DNS. The server would disappear; so I made a

copy, and I put it online. I looked at it carefully. There's some copyright issues in the database. They were sloppy, but the metadata's bad. Titles are wrong. The scanning was a little sloppy. Not only just skewed pages; but missed pages, or half a book is gone, or they screwed up the resolution.

We made a copy and we put it online in the intent just to make it better. Put it on the Internet archive. A million views a month we were getting on this thing. It became more visible. We got a few take down notices. That happens in the big leagues. You get take down notices, and you respond to them. You say, "Okay, fine, I'll remove it."

[Anuj Srinivas] In certain cases, you're happy to comply with them.

[Carl Malamud] Oh, absolutely. If someone says the book is copyrighted, it's not a problem. We'll remove it immediately. No big deal. When you're dealing with hundreds of thousands, or millions of books like Brewster Kahle has on the Internet Archive, you get those. Mistakes happen.

The government freaked out, because it became more visible and they got a couple of notices from people saying, "Oh my God, you've got my book." They took the entire database down. They asked us to take the entire database down. I said, "No. No, we're not going to do that." They said, "Well, take down everything from 1900 on."

[Anuj Srinivas] What kind of books are part of this collection?

[Carl Malamud] It's an amazing collection. 50 different languages. About half are in romance languages, English, German, French. Historical books, non-fiction, Gazette of India. All sorts of gazettes for different states, 50,000 books in Sanskrit. Books in, 30,000 in Gujarati. I'm not sure of these numbers, but it's in the tens of thousands. Tens of thousands in Punjabi. Books in Tibetan. Books going back a thousand years. Just this amazing, unique collection that's unavailable anyplace else in the world. I'm getting notes from India scholars from all over the world, saying "Oh my God, this is great!"

We make it available in a different way. You can navigate much more easily. People can very quickly send us notices and say, "Oh, you've got the metadata wrong," and we're able to fix it. We're trying to make it better. The government said, "No, no, no. You have to take it offline, and we will tell you which books are okay, because we are going to examine them one by one and decide which are copyrighted and which are not."

This Little USB Holds 19,000 Indian Standards

First of all, I'm not sure I believe they're the experts in what is copyright and what is not; and copyright's not a binary thing, right. If you're blind, I can make access to any book under an international treaty. Under the Indian Copyright Act, if it's for educational purposes between a teacher and a pupil—That's what the Delhi University case was all about. So it's not a binary thing. I just don't think it's the government's job to tell you what to read and what not to read, and certainly not their job to tell me which books to make available on the Internet.

[Anuj Srinivas] Correct. That's true.

[Carl Malamud] Unless there's some national security issue, or something of that sort; but if it's simply, "We don't like it." It's like, "I'm sorry. I don't care."

[Anuj Srinivas] Correct. Now, we've come across the situation where the IT Ministry has taken their library down, and yours is the only version that's up.

[Carl Malamud] Yes, which is nuts, absolutely nuts. Instead of having this fight with the government, I'd much rather that we were making the database better, that I was working with them, that we were scanning more books. That we were doing what we do on our Hind Swaraj Collection, which is very, very high quality material. Can I tell you about that?

[Anuj Srinivas] Yeah, sure.

[Carl Malamud] The Hind Swaraj Collection started with the collected works of Mahatma Gandhi, all 100 volumes, right. Available online, anybody can read them. You can download PDFs, you can download ebook. I found 129 All India radio broadcasts of Gandhi speaking, every couple of days during the last year of his life. You can walk through the last year of his life. For each of those, I took the relevant portion of the collected works, put it into HTML, so you can listen to him in Hindi or Gujarati. You can read the English translation. You can then click into the collected works and see the letters he wrote that day. What did he do the next day? What did he do the previous day?

We have the selected works of Nehru. Many of them were on a government server, but they were missing some volumes. I got those volumes, so we have the most complete version of that. The works of Amedkar, the collected works, were on the Maharashta state server, but they were missing the last six volumes. Again, most complete version.

Bharat Ek Khoj, beautiful, beautiful show based on the discovery of India. Really, really nicely done. It was in the 1980s, when Doordarshan was a government agency; so we didn't just put that online. We added subtitles in a whole variety of different languages. Not for all the episodes, because we didn't have enough money; but for five of the episodes, you can now have subtitles in Hindi, which they didn't have. They had English. Also Urdu, and Telugu, and other languages. We're trying to make it better and more useful.

[Anuj Srinivas] Sure, sure. Carl, some people view public domain advocacy work, the kind of work that you do, as completely opposed to copyright. They believe that sometimes you may or may not tread the line of piracy, for instance.

[Carl Malamud] I'm not a pirate. I'm not a pirate.

[Anuj Srinivas] Your own work, how do you decide when to jump into a project? Is it about public interest? Is that the test you consider when you—

[Carl Malamud] Well, it's partly public interest. I look at a whole variety of things. First of all, let me say this. I made a living as a professional writer. Okay? I was a musician. I believe in copyright. I think it's an amazing thing, but remember the purpose of copyright is to advance the useful arts. It's to make knowledge more available, and there are limits and exceptions to copyright. If you have private property, you need public parks in the middle. You can't have a city without both. You want commerce, but you want civic life.

I look at this, and I ask myself. Is it government data? Is the copyright assertion valid? Is it in the public interest? Is there a compelling need for this information? If it's government information that regulates public safety, or the operation of corporations, or the official method of notifying citizens of the acts of the government; clearly public, absolutely clearly public.

I study it very carefully. You know a lot of people do this kind of stuff, and they think, "Oh, you're a hacker." Well, I have tech skills, there's no doubt about it. Not as good as a lot of the kids that are out there, but I've been doing this a long time. I'm pretty good at big databases and textual stuff. I think very, very carefully before putting something online. I study it. I do a lot of research.

You know, with the Indian Standards, I didn't just jump in. I spent a lot of time. I got that three-volume treatise on constitutional law, and I read very carefully. I'm not a lawyer, but I read that. I went and saw Sam Pitroda. I talked to a

bunch of people. Only after doing that, did I decide that, "Okay, it is my belief that this is public information." You know what, if I was wrong, I will suffer the consequences. That's the other part of doing this kind of work. If you do make a mistake, you might have to pay a penalty; and you need to be prepared for that.

[Anuj Srinivas] That's true. That's true. One thing—I'd like to just shift tacks a little bit here and talk about the government. Not only the Indian government, generally across the world, the government response to the kind of work that you do. Currently, in India, this government, the Modi government, the previous government; they both publicly maintained that we want to use technology for greater transparency, we want to use technology for greater public information access. You know, eGoveranance and so on and so forth. Sometimes the very first reaction they have to when someone comes out and does some work like this, is one of hostility.

We've seen a lot of people like yourself in India receive legal notices. You, yourself, are fighting a legal battle, as you've pointed out. Is there a contradiction between the way the governments claim what they're standing for and their actual actions when it comes to this? And how do you view your role in this?

[Carl Malamud] Bureaucracies really will fight back on this kind of a thing. I went and saw Sam Pitroda, and he said, "Go for it." But the Bureau of Indian Standards was like, "No, no, no. We've always done it this way. Everybody else does it this way." If you were to go to them as a transparency advocate, or as a government minister -particularly as a government minister- you're going to get an eight-hour long meeting with 15 BIS executives explaining why the sky will fall. When you're in governance, you have to be careful. You don't want to break things. Even if you're trying to push for openness -the Obama administration was very good at that- but you can only go so far.

Working with civic society is important, and again, you do face hostility sometimes. A lot of my job is attempting to explain why it is we're doing what we're doing. Why this is the right thing to do. One of the prime techniques I have, is that I get millions of people using the information. Then, all of a sudden it's not just some open government guy saying, "Hey, hey, hey, you should be doing it better." It's like look, "Millions of engineering students in India use this information every day. This is why you should have it. And look, the sky hasn't fallen, right. You're still selling standards." You know what, even if I give away all the standards, there are people that are going to want certified copies of the

standards, and they're going to want the complete edition of all prior versions. All I care about is the stuff that has legal import.

[Anuj Srinivas] Yeah. Do you see yourself as a stakeholder that's trying to get the government to do its job better with regard to public access?

[Carl Malamud] That is exactly what I'm trying to do. I want to put myself out of business. I don't want to be doing Indian standards. BIS knows that way better than me. I don't have the source code, right. I've got to take a PDF file and retype it to turn it into HTML. Or if I'm lucky, it's born digital; but even then, I have to reformat it, right. You pull it out of PDF, paragraph marks, italics, footnotes, superscripts. A tremendous amount of work. If I had their original Word files, I'm assuming that's what it is, it'd be trivial. It's their job. They should be doing it. They should have it available for bulk access, so anybody can download it. So Indian Kanoon, for example, could just, boom, incorporate it into their search engine. That's a good thing, because all of a sudden the standards are all over. Everybody knows safety standards; we have a safer world.

[Anuj Srinivas] Sure. That's true. Just to wrap up this discussion, this concept of a safer world. Generally, in your previous speeches and talks that I've heard, you've talked about the link between greater access to public information and genuinely perhaps understanding and solving current social, economic, political problems of today's time. Why do you believe these two are connected?

[Carl Malamud] I believe we have a number of problems in our world that look intractable, that look unsolvable. Global warming. A lot of people just don't believe it's true, or they're not taking action, or their self-interest is, "I'm not taking action, because I work in a coal mine; and I like pollution, because I make more money on it." Intolerance towards other people. Poverty, right. Education is the way out of poverty. Famine, disease. The question is what can we do about these problems? I firmly believe that access to knowledge is the only way we're going to move forward.

If all citizens begin to understand climate change, at some point they will demand we take action; because it truly is a global crisis. We must take action. The more people that understand—I don't care which government it is, they are politicians. If everybody is standing up saying, "Global warming! Oh my God, we've got to do something. Look at these hurricanes, look at these fires, look at these droughts." Then we'll have change.

This Little USB Holds 19,000 Indian Standards

Education is one of the key pressing issues right now. Disease, you never know where solutions to disease are going to come from. One of the things I've learned on the Internet, when I put bulk information online, some random person always comes in and makes it better. Somebody you never thought of.

I'm convinced every generation has a promise. It might have been aeronautics. It might have been the elimination of involuntary servitude, right. I might be suffrage for all people. It might be technology. It might be social change. I think our great promise—The Internet is there, it works, universal access to all knowledge is something we can do; and I am firmly convinced it will make the world a better place.

[Anuj Srinivas] Okay, good. Thank you, Carl. Thanks for your time and-

[Carl Malamud] Thank you very much.

[Anuj Srinivas] We'll be following your case and the issues that you've been working on closely at The Wire as well. Thank you.

Pandit Jawaharlal Nehru at the microphone, 1947–07-20.

Playing billiards with officers at the RAF Mess at Jammu in May, 1948.

At the regatta in Kashmir in May, 1948.

At the Viceregal Lodge Simla, during a holiday in May 1948.
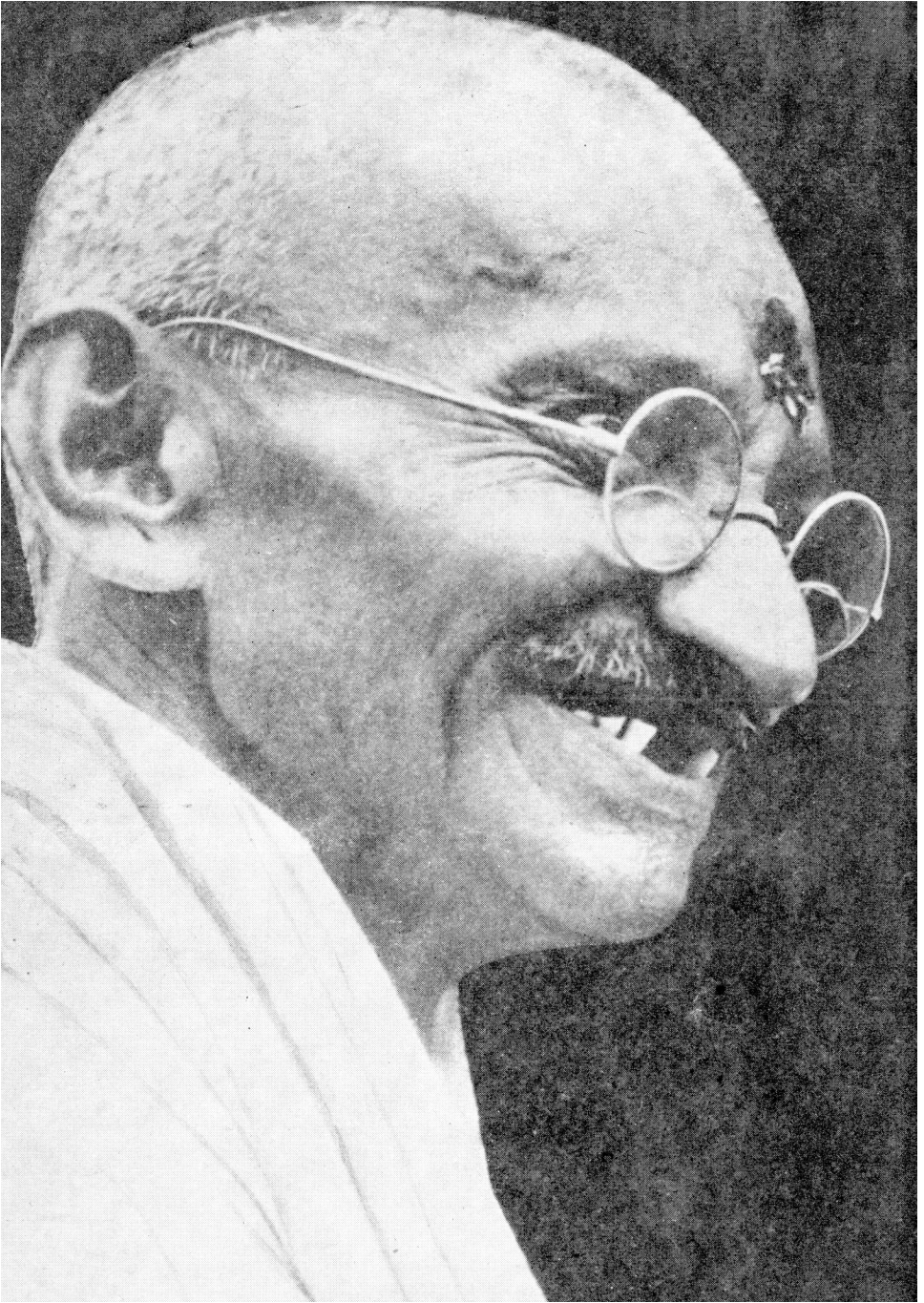
CWMG, vol. 43 (1930), p. 185. Undated.

Indira Gandhi on a Yak, while on her way to Bhutan, September 20, 1958.

Escorting a visiting Chinese delegation, December 6, 1954.

The Hon'ble Pandit Jawaharlal Nehru, Prime Minister of India, accompanied by Her Excellency Shrimati Vijaya Lakshmi, Indian Ambassador to the U.S.A. and Shrimati Indira Gandhi paid a visit to the farm owned by Mr. Will Smith, on October 28, 1949, during his visit to Chicago.

The Prime Minister, Shri Jawaharlal Nehru and Smt. Indira Gandhi seen with Gen. Tang Kwan San, (extreme left) of the People's Republic of China at Rinchengang, Tibet-Bhutan border, while on their way to Bhutan. (September, 1958).

Smt. Indira Gandhi photographed with Republic Day folk dancers from Kulu Valley. January 29, 1958.

CWMG, vol. 14 (1917–1918), Frontispiece, Gandhi-ji in 1918.

CWMG, vol. 78 (1944), Frontispiece.

Note on Code Swaraj

Carl Malamud, California, December 4–25, 2017

I returned from India at the end of October and faced a deluge of unfinished tasks I had left behind and new tasks I had accumulated while traveling. Most pressing of course were my court cases, all of which needed attention. But first, I indulged myself.

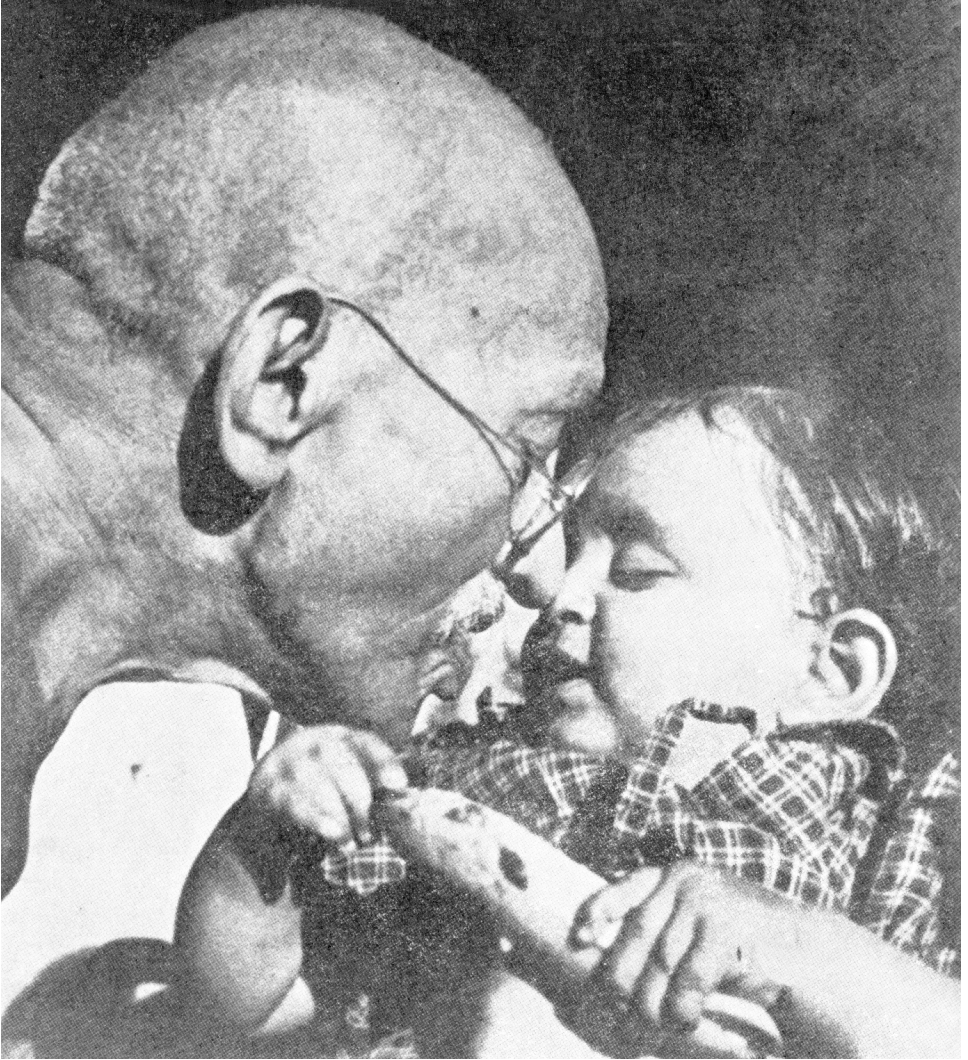Waiting for me outside my office were nine large boxes weighing a total of 463 pounds. Inside were 312 books. These were the books that Lord Richard Attenborough had used in preparing to make the movie Gandhi. After his death, one of his producers purchased the books at auction in 2015, and had recently contacted the Consul-General, Ambassador Ashok, and asked if he knew of a useful place to donate the books. The Ambassador sent the producer my way and the shipment had finally arrived.

The collection is really quite incredible. In one of the boxes were original shooting scripts for the movie, set budgets, call sheets, and the auction house receipt and catalog. The books included some materials I already had, such as Pyarelal Nayyar's 8-volume biography and volumes of the Collected Works. But also included in the shipment were dozens of Navavijan Trust books by and about Gandhi I had not seen.

I selected 47 of the books that were pretty clearly postable, including some gems like the industrialist G.D. Birla's 4-volume collection of his correspondence with Gandhi. Gandhi-ji was staying at Birla's house in Mumbai when he was assassinated, and they had corresponded frequently for 44 years.

Also outside my office were the nine most recent volumes of the Selected Works of Nehru which I had ordered, as well as a set of incredibly large books, a multi-volume set of source documents from the fight for liberation. The source documents were edited by Sabyasachi Bhattacharya, one of my favorite historians. I gathered all of these together and drove down to the Internet Archive to have them scanned.

While I was gathering these materials, Ambassador Ashok introduced me to another gentleman who had a huge collection of books about India he wanted to donate. I agreed to pay shipping charges and soon received 25 boxes with 212

large books, a 763-pound shipment. With so many books, I had to buy more bookcases, but it was well worth it!

Course Cases Clamoring For Attention

My core task in November was tending to the court cases. First up was India. We had filed a public interest litigation suit in December 2015 in the High Court of Delhi. In India, one typically brings suit against two parties: the agency in question (in this case the Bureau of Indian Standards) and the Government of India itself. The Bureau had failed to respond, but finally after some cajoling from the Court, in June of 2016, they filed a response to our suit. The Union Government, however, repeatedly failed to respond. Not only did they fail to respond, they failed to turn up in Court.

The lawyers from the firm of Nishith Desai had gone through this cycle several times, each time appearing in court only to find the government had failed to send anybody. In fact, even the Bureau had not shown up at first. I remember one call I got from India after such an appearance. The lawyers told me that somebody had in fact shown up for the other side, but the Court had asked him if he was representing BIS or the Union Government. He didn't know, so he was sent back to find out who his client was.

On November 13th, we had another hearing. This was the fourth time the Union Government had been asked to respond, and evidently four times is the magic number. The Court ruled that the response from the Bureau would also serve as the response from the Union Government, and an oral argument was ordered for February 27, 2018. This was exciting. After two years of paperwork and procedures, we were finally ready to get our case heard on the merits.

That afternoon, I caught a plane for Atlanta, Georgia for the second case. In this one, the State of Georgia had me accused of practicing a "form of terrorism" because I had posted the Official Code of Georgia Annotated on the Internet for anybody to read without charge. The State felt this violated their copyright. I had sent numerous letters to the Speaker of the Georgia Assembly explaining why, in the United States, the law has no copyright because the law is owned by the people, but my explanations had not held much sway with the authorities.

Now let us be clear. Every single act in the Georgia legislature begins with these words: "An Act. To Amend the Official Code of Georgia Annotated." There is only one official law of Georgia and this was it. Copyright was in the name of

the sate. It was the law of the land. This was, in my considered opinion, an edict of government.

The State's position was that they used a vendor to prepare the Official Code of Georgia Annotated and while they conceded that the law itself perhaps had no copyright, they believed they had the right to claim ownership in the name of the State over the annotations.

There are several kinds of annotations in the Official Code, but the one the State focused in on was summaries of court cases relevant to the law. These were prepared by their vendor and the State felt that without giving the vendor an exclusive right to sell the code for several hundred dollars, there would be no incentive to produce the Official Code and this would somehow cost the taxpayers untold millions. Their position was that by giving a monopoly concession to a private party, they were somehow getting a good deal for the taxpayers.

While this explanation perhaps resonated in the halls of the Georgia Statehouse, I can tell you from experience that nobody I spoke to in a taxicab or a bar or when speaking to students understood the State's position. You can't slice and dice the only code of the state into pieces that you can speak and pieces that you can't speak.

The state tried hard to push the theory that the code was in fact available because they had a copy in a few law libraries at county courthouses. NBC News did an investigative report and went looking for those copies in the courthouse libraries and they found that in most cases the codes were locked in a back room, or volumes were missing or damaged. NBC won an Emmy Award for that report.

Mind you, I wasn't the only one who was not able to use the Official Code of Georgia without permission. One of our declarations filed in the District Court was from the legal provider Fastcase. Ed Walters, the CEO and co-founder of Fastcase, has been a long-time member of my board of directors. Fastcase provides access to case law and statutes for all 50 states. One of the primary ways it does this is by cutting deals with state bar associations.

For the State Bar of Georgia, the organization representing all lawyers in the state, Fastcase had been named the official provider of law. All lawyers were given free access to Fastcase as part of their membership in the bar. Fastcase approached the state and their vendor and asked to license the Official Code so

that they might provide the only official law of Georgia to the lawyers of Georgia. They were told that Fastcase would not be permitted to use the official laws of Georgia "at any price."

We had lost our fight in the District Court. The Judge simply didn't buy our argument. He had ruled that copies in courthouse libraries were sufficient. He honed in on the idea that if a private vendor had taken the laws and written their own judicial summaries, those summaries would in fact be subject to copyright. The judge issued an injunction prohibiting me from distributing the Official Code or having any mention of it on my site. I was gagged by a federal injunction from speaking the law.

We readily conceded the idea that privately-produced summaries of court cases could be subject to copyright. Our argument was that the Official Code of Georgia was not some unofficial private compilation, it was the definitive and official statement of the law, issued under the name and authority of the State of Georgia. Indeed, Section 1–1–1 of the Official Code states that people consulting unofficial compilations would do so "at their peril."

We were now appearing before the U.S. Court of Appeals for the Eleventh Circuit. Things had moved quickly on this case. We filed our notice of appeal on April 7, 2017 and our appellant's brief went in May 17. After an appellant files a brief, outside parties wishing to support our position were given until May 24 to file their Friend of the Court (*amicus curiae*) brief.

Three briefs were filed on our behalf. First was a spectacular one from the civil liberties community, with the ACLU taking the lead and joined by groups such as the Southern Poverty Law Center. The Stanford Law School legal clinic filed another brief on behalf of a group of for-profit and non-profit innovative groups that were making great strides in making the law more accessible to ordinary people. Public Knowledge, a leading Washington, D.C. policy group filed a brief on behalf of a huge collection of law professors and librarians, as well as the library associations such as the American Library Association and the American Association of Law Libraries. It was quite a strong showing. I was pleased.

After we had submitted our filings, the State got to do the same. They filed their brief on June 30, 2017. Evidently, the State had no friends because there were no *amicus* briefs filed on their behalf.

The ACLU had filed a special motion with the court asking for permission to join with us in the oral argument. We had readily agreed! They were joining my

lawyer, Elizabeth Rader, a well-known intellectual property expert with the firm of Alston & Bird, the most prominent law firm in Georgia. Elizabeth and her colleagues at Alston had spent a tremendous amount of time and effort shepherding this case through the district and appelate courts, and I greatly appreciated their efforts.

I got into Atlanta early enough to be able to sit in the courtroom the day before and see how the judges handled oral argument. In a Court of Appeals hearing, you often get a "hot bench" which means the judges ask lots of questions. Indeed, sometimes the lawyer only gets to "may it please the court" before the judges interrupt and start firing away. This was definitely a hot bench and I enjoyed watching the three judges put the lawyers through their paces.

On Thursday, November 16, it was our turn. We appeared before a panel of three judges, and they were totally prepared. They grilled us hard, but they grilled the State of Georgia even harder. They wanted to know why the state had included annotations in the Official Code if it didn't want the annotations to be official. They pulled out sections from the Official Code indicating that the entire code was law, and grilled the states lawyers on exactly what the words meant. They asked about availability of the code.

We didn't get an easy ride either, but at the end of the day it was clear the court understood our position. Perhaps they wouldn't agree with us, but at least they understood what we were saying. It wasn't so clear they understood why the state was taking the position it had taken. They asked the state why it couldn't simply publish an Official Code without the annotations if they felt those shouldn't be freely available.

The oral argument lasted over an hour, twice as long as any other case the court heard that week. At the end, the Chief Judge rose and remarked "interesting case!" I viewed that as a positive sign. Judges like interesting cases. You can never read the tea leaves when it comes to a bench, but I left the courtroom hopeful that we had a chance. The next morning, I caught the 6 a.m. flight back to the Bay Area.

The Big "Standards Are Law" Case

There was one more court case we had to deal with, and this was the big standards case in the U.S. Court of Appeals for the District of Columbia. As in India, I had carefully looked through legal materials and then purchased technical public safety standards with the force of law and posted them on the

Internet. I found building codes, safety of hazardous materials, worker safety on the factory floor, methods for testing for lead in water, and much more that had been incorporated into law at the federal or state level in the United States. All told, I had posted over 1,400 such laws.

This work had started in 2008 when I posted the California Building Code, which I purchased for $979.95. By 2012, I had posted mandatory building codes for all the states, as well as plumbing, fire, electrical, fuel and gas, and other codes. I had also begun posting a large number of standards required by federal law, documents such as legal requirements to prevent oil spills in the Gulf of Mexico and the Arctic Ocean, railroad safety specifications, toy safety standards, and baby and infant products, such as car seats, cribs, playpens, strollers, swings, and bath tubs.

In 2013, I was sued by three standards organizations over several hundred of these public safety laws. The next year, three more plaintiffs had filed a second suit, and the two cases had progressed together through the courts with six plaintiffs and their four fancy white-shoe law firms.

There was no disagreement between us and the plaintiffs on a crucial point: every single one of the codes they sued me for are the law of the land. The plaintiffs, however, felt they should have an exclusive right to distribute these laws in any manner they felt was appropriate. They required any private citizen or government official who wished to quote the law to ask for their permission first. That permission was arbitrarily denied or granted at their whim. For example, they denied students the right to incorporate formulas from the sfaety laws in their class projects.

When we posted standards, it was not a simple scan and dump run. Because our government operates slowly, many of the codes that still had the force of law were no longer for sale by the standards bodies because they were supplanted by newer versions. I scoured the used book markets on Amazon, Abebooks, and eBay to find copies of many of these documents.

Once I received a document, we went through an elaborate process to prepare them for posting. All the standards were scanned and run through optical character recognition (OCR) and then a cover sheet was prepended to the document explaining that it had been incorporated into law and by what agency. In the case of several hundred of the standards that had that were particularly important to safety, we retyped the entire codes into modern HTML, redrew the diagrams, coded the documents so people with visual disabilities

could navigate them more effectively, and placed all the documents both on our site and on public access locations such as the Internet Archive.

The Internet Archive, in turn, as they do with all documents on their site, added even more utility to the documents, transforming them into ebook formats, exposing them to search engines such as Google so they could be easily found, allowing users to submit comments and reviews with even more information.

The standards bodies had not been amused and the litigation had been intense. In 2015, we underwent 23 days of legal depositions, three of those days were spent deposing me. For my deposition, each day consisted of 12–14 hours of questioning. On my side, there were four lawyers, on their side there were six lawyers, plus the stenographer and the videographer. The questioning was intense.

We lost in the District Court. The judge simply didn't buy our argument. She agreed that these were all "the law" but said if Congress had wanted to say that these laws were not subject to copyright, they could have passed a law saying so. At one point the judge suggested we should be knocking on the doors of "the big white building up the hill" pointing in the direction of the U.S. Capitol.

We filed our notice of appeal in February, 2017, but things move slowly in the District of Columbia. It took a long time for the court to set a schedule. Finally, in August, we filed our brief, and at the end of September, our *amicus* briefs were filed. Our showing was very strong. In addition to the American Library Association and the American Association of Law Libraries, a huge number of eminent law professors and law librarians had joined in a brief from Public Knowledge.

Also signing on to that brief were an impressive number of former government officials, including Raymond Mosley, who ran the Office of the Federal Register for 18 years and both Public Printers of the United States appointed by President George W. Bush. The Office of the Federal Register works with the Government Publishing Office to produce the Official Journals of Government, including the Code of Federal Regulations. These were the people officially charged with promulgation of federal law and they were putting their names down in support of my efforts.

They were joined by my former boss John D. Podesta, as well as Robert Reich, the former Secretary of Labor, and Dr. David Michaels, the former director of the Occupational Safety and Health Administration (OSHA). All these

government officials stood up for the proposition that requiring private citizens wanting to read the law must first get permission from a private party is, as John Podesta put it to me in a phone call, "batshit crazy."

Another brief was filed by a group of noted trademark professors, and Congresswoman Lofgren and Congressman Issa filed a brief on our behalf saying that the law must be available in a democracy. Both members have served many years on the House Judiciary Committee, and Congressman Issa is the Chairman of the Subcommittee on Courts, Intellectual Property, and the Internet, which has jurisdiction over this issue. This was compelling.

In November, the plaintiffs filed their brief. They had hired a new lead attorney, the former Solicitor General of the United States, and in early December were joined by their friends. The establishment was clearly upset. The American Insurance Association and the International Trademark Association both filed briefs. The American Medical Association was joined by the American Dental Association and the American Hospital Association.

Last to file an *amicus* brief was the American National Standards Institute, joined by 10 other standards bodies, including the International Organization for Standardization in Geneva. Their argument was simple: We want the money. We need the money. If we don't have the exclusive right to sell the law, we won't be able to produce high quality safety standards.

I disagree strongly with that assertion. The standards bodies produce a huge number of standards, and only a few become the law. When something like the National Electrical Code is enacted into law in all 50 states, they issue press releases and boast about it in their annual reports. The standards bodies desperately want these documents to become the law. By doing so, they get the Gold Seal of Approval of the American People and they use it to tremendous advantage in marketing their services.

As in India, the big money isn't in sales of standards documents. The really big money is revenue streams such as certification of products. Underwriters Laboratories, for example, which certifies consumer products such as light bulbs and washing machines, makes over $2 billion/year in certification revenue. In India, the vast majority of the Bureau's revenues likewise come from their mandatory certification program. In addition to certification, there are handbooks, training, membership fees, and many other lucrative revenue streams.

Note on Code Swaraj

As the courts have pointed out in the past, these standards are not only meant to become the law, when they do become the law it is because their industry members helped write the law. The big money is not in selling a few documents, the big money is in the shield that industry gets by saying "we comply with the law."

There is another example of big money, and this demonstrates clearly why the standards bodies don't actually need the money, they have become simply greedy. Or, as Ross Perot so colorfully put it in describing another batch of overpaid and lazy executives, they had become "fat, happy, and a little bit stupid." The American National Standards Institute, like all the other standards bodies, is registered as a certified nongovernmental charity with the Internal Revenue Service. They brought in $44.2 million in revenue in 2015. Millions of dollars of that revenue go to compensate a few senior managers. The CEO makes over $2 million in yearly salary, and all the senior managers list themselves as working a 35-hour work week. Likewise, the National Fire Protection Association not only paid over $1 million per year to their last CEO, when he retired they gave him a $4 million retirement check.

These are very rich pay packages for a charity. They've put money over mission, have lost their sense of service. Let me be clear about one thing, however: many of these organizations put out very high-quality codes and standards. They do incredible substanative work, but this work is all being done by dedicated volunteers, not overpaid executives in the back office. Nobody gets paid to write the National Electrical Code, it is created out of a sense of professional and public service by thousands of volunteers, including a large number of dedicated federal, state, and local employees.

...

I must be clear that at this point in my legal battles, most of the heavy lifting is being done by the law firms that represent Public Resource. I, of course, have to read all the briefs, and I spend an inordinate amount of time trying to educate myself about legal procedure and the merits of my case. Particularly when we were going through the intense process of discovery and depositions, I was intensely involved, which is of course not always a good thing. As a non-lawyer (I dropped out of Georgetown Law School after completing my first year), I can drive my lawyers crazy with stupid questions and my lack of experience. But, because I do know the facts of my case and I work hard, they tolerate me.

Some people think when you hire a law firm, you're the client and you tell them what to do and they carry out your orders. That isn't how it works. The lawyers, particularly the kind of experienced senior litigators I work with, know infinitely more about the law than I do. For the most part, their job is to tell me how it is.

The idea that you command your lawyers and they simply carry out orders is even less true in the world of pro bono legal representation. I am blessed that nine major law firms around the world have agreed to represent Public Resource on a pro bono basis. In 2015, they contributed $2.8 million in legal time, in 2016 it was over $1.8 million, and in 2017 it over $1 million. It would not be possible to fight the fights that we face without their help. I simply couldn't afford it, and would have had to fold my cards and give up the fight.

Back To Work On Real Data, My "Bread Labor"

As November came to a close, I continued to work on my backlog from India. Most pressing was the Digital Library of India, which I had renamed the Public Library of India. The government still hadn't put their version back online and Sanskrit scholars were sending me notes asking for additional materials. With the addition of 4,450 books from the Archeological Survey of India, we had pushed the total volumes online close to 400,000 books.

Also taking considerable time were the official gazettes of India. The national government gazette had been straightforward to mirror. Looking in the Public Library repository, I found several hundred old gazettes from before liberation, and those were also added to the collection. The tough part though, were the gazettes of the state governments and several large cities.

One example was the Odisha Gazette, the official publication of a state with 43 million people. I wrote a script that brought down 38,073 issues of the gazette as PDF files. But, after that script ran, I pulled up some of the files and noticed that they referenced a font for the language Oriya that was not embedded in the PDF file. That means all you see is gibberish because your computer is looking for that font installed on the system instead of embedded in the file.

After running a series of scripts, I determined that 35,705 of the files had this problem and I would have to embed the fonts before uploading them to the Internet Archive. But, the font that they assumed would be on your system is an obscure one that was produced years ago by an Indian research institute and after several days of looking around, I was unable to find it for sale or for download, so I shelved Odisha for the time being.

Other states were even harder. With Odisha, I was able to pull up index files with long lists of issues of the Gazette, and in that index file was a URL directly to each PDF file. By first bringing down the indices, then parsing them for metadata and file addresses, it was fairly trivial to bring in all the PDF files. But, most of the states were not that straightforward.

Most of the state gazettes are based on some Microsoft server software which does not expose the URL (network address) of the PDF files. The problem was that each state had a different opaque way of getting issues. There are several dozen official gazettes in India, one for each state and ones for major municipalities like Delhi. Each one is programmed differently.

We had amassed 163,977 total PDF files in the collection, but it was clear that to do this right, we would have to do some serious work on it in 2018. Not only did files have to be brought in for all the gazettes, the collection needed to be kept up to date to be truly useful, and in order to permit the kind of searching across gazettes we really wanted to see, we had to tackle the issue of high-quality optical character recognition on any scanned gazettes, an issue we also faced with the Public Library of India. In addition, as we downloaded gazettes from the Union government and from states and cities, it was clear some of them were improperly labeled or missing, so some serious quality assurance would be necessary.

The purpose of the official journals of government for any country are to allow citizens to know what their government is doing. This was the genesis in the United States of the Federal Register, the official journal of the federal government. There had been a famous court case that reached the Supreme Court in which it turned out that the government sued a group during the Great Depression for noncompliance with regulations, but nobody could actually find those regulations because they had never been published.

At the urging of Justice Brandeis of the Supreme Court, a Harvard Law professor wrote a seminal paper titled "Government in Ignorance of the Law—A Plea for Better Publication of Executive Legislation." That led to a formal procedure in which all government regulations would be first published in a preliminary fashion, known as a "Notice of Proposed Rulemaking" so that citizens might know what would be happening, then the final rules would also be published. The entire regulation would then be incorporated into a consolidated document, the Code of Federal Regulations, which would be kept up to date with all amendments, deletions, and helpful historical notes and pointers to the enabling statutes.

In my fight to make technical standards that have the force of law at the federal level available, I had uncovered a huge missing gap in the Code of Federal Regulations. I have estimated that over 30 percent of the Code of Federal Regulations is simply not available for citizens to read without incurring great expense and getting permission first from a private party. Those are the model codes and standards that are "incorporated by reference" into regulations, having the full force of law, but not being actually contained in the itself. The purpose of this mechanism was originally to save space, but it has become an opportunity to limit access and derive unjust rents from citizens by private organizations.

The question of public printing of the law is one that I have long had an interest in for the United States, to the extent of having thrown my name into the pool to be considered as Public Printer of the United States, the senior official charged with promulgating the law at the federal level and the director of the Government Printing Office. I didn't get the job, but I was on the shortlist and got to see firsthand how the Office of Presidential Personnel in the White House works, and I learned an awful lot about the Printing Office, so the experience was very much worthwhile.

Because of my interest in public printing, I also had contacts around the world with people who worked in this area, such as John Sheridan, who created probably the best system in the world for promulgation of the law under the auspices of the National Archives of the United Kingdom. It is a wonderful system, allowing one to pull up a definitive text for all laws ever enacted in England. You can actually pull up the text of Magna Carta as enacted and reenacted and see it change over time as it was amended.

In India, the question of access to the law has become more visible. Two lawyers at the firm of Nishith Desai Associates, Gowree Gokhale and Jaideep Reddy, published an insightful piece in Vantage Asia Magazine on "a push for procedural certainty" in which they outlined many examples of ambiguity in being able to ascertain the status of regulations and statutes. My friend and co-petitioner on the standards case, Sushant Sinha, with his online free collection of all court cases and laws at Indian Kanoon, had also taken a deep interest in the subject. Srinivas Kodali, our other co-petitioner on the standards case, had been the one that had kicked off the collection of official gazettes.

We were not alone. In September of 2017, the Honorable Justice Manmohan of the High Court of Delhi had heard about the status of access to the law for a case he was hearing and had ordered the Ministry of Law to come up with a

better system that would make all central acts and subordinate legislation available on a central portal. The order stated that legislation should be made available as "machine readable PDF format," which presumably means one could extract the text from the PDF file and use it for big data analysis, transformation to HTML, better metadata, and other uses. It is clear that this area will receive significant attention in 2018 and beyond.

Why I Was Neglecting Works of Government

I was spending my days scanning Gandhi, maintaining my archive of 6,000 U.S. government films, looking at official gazettes. But, none of these things was what I was supposed to be doing. What I was supposed to be doing instead was publishing the results of my research into Works of the U.S. Government.

In the U.S., as with most national copyright systems, there is a list of things that may not be copyrighted. In the U.S., one of the most notable of those exceptions is works of the U.S. government, which are works authored by U.S. federal employees or officers in the course of their official duties. The idea behind this exception is that the employee is a servant of the people, the people have paid the servant a salary, and the resulting work product thus belongs to their employer, the people. It is a simple, yet powerful concept.

Works of government are why, when the government was selling the Patent and Securities and Exchange databases for high prices as a revenue source in the early 1990s, I was able to liberate those databases. The databases cost several hundred thousand dollars per year to purchase, but if I could raise the money, I was clear. Once I had the data, there was no copyright, and I was thus allowed to post the database on the Internet.

Ironically enough, the way I purchased these government documents from the U.S. government in order to give them away to the people of the U.S. was to apply for a grant from another part of the government, the National Science Foundation (NSF). NSF was instrumental in the growth of the Internet during that period and Stephen Wolff, the division director, was a brave man to give me that grant.

When the news broke about this new project, Chairman Dingell of the powerful House Energy Committee sent an outraged letter to the National Science Foundation asking why they were "competing" with the private sector by giving away this information. It was only after Vice President Gore was quoted in the

New York Times as calling this "a big win for the American public" that things settled down. I've been a big Al Gore fan every since.

In the course of my work placing standards online, I had noticed that federal employees made substantial contributions to many of these crucial safety laws, yet the private standards bodies persisted in asserting copyright over them. This same practice extended much more broadly into scholarly publishing. Because of my work in the law, I had followed with interest President Obama's scholarly pursuits, and carefully read an article he published in the Harvard Law Review. It seemed strange to me that the Harvard Law Review was asserting copyright over his work, and I noticed the same practice in other journals such as Science where he published pieces.

A prominent foundation had approached me in 2016 to do something about this situation. In October of 2016, they had made an offer of $500,000 for 2017 and $400,000 in 2018 to work in this area. There was a catch, though. They had demanded a seat on our board of directors and wanted to exert detailed control over my work, including making the money available in frequent payments, each subject to meeting milestones. I remembered sitting in Dinesh Trivedi's bungalow calling back to the U.S. and learning those terms, then coming out to the living room and telling Dinesh and Sam that I had just turned down a $900,000 grant.

I had explained to the foundation that their work would allow us to study in depth the question of works of government, notify the publishers and the government of any violations we found, and then perhaps post any articles that were clearly in the public domain. However, most of this money would be going to scanning any journal articles (an expensive proposition if you do it at scale), paying for graduate students in the library sciences, and expenses of that sort.

What the grant would not cover, however, were legal expenses. Even if we found a huge number of journal articles that were clearly in the public domain, the publishers are a litigious bunch and there is no guarantee they would not sue just out of spite or as a delaying tactic to preserve their ill-gotten revenue streams.

In other words, this was a highly risky project. The reason I turned down the money was that I could not allow a foundation official to join our board and direct our activities, particularly since I had never worked with this fellow. Some foundations insist on pay to play: they give you money if you carry out a

program they have in mind, but that wasn't how we work and we have always put mission before money.

The foundation had finally come back and agreed to give us $250,000 in January 2017 and said we could have $250,000 more in July after submitting a report, with the remaining $400,000 to come as installments in 2018 and 2019. It was far more "chunking" of the grant into tranches than I like to see, but I signed the papers.

Auditing Publishers For Shady Practices

I spent the first six months of 2017 working intensively on research on works of government. Working with two professors and a graduate student at the University of North Carolina, and with help from librarians at the University of California and Stanford, we conducted an intensive search of the scholarly literature looking for author affiliations. It is actually non-trivial to find this information searching journal databases because author affiliations can be written in a number of ways.

What we basically did was throw each government agency, one by one, into three different commercial search engines used by libraries, and looked at the results. For example, if you search for "Centers for Disease Control" you get articles from not only the U.S. agency, but their Chinese counterpart. So, you refine the search to look for the agency name and the word "U.S." or "United States" or "Atlanta."

The number of results we found were breathtaking. Our initial audit found 1,264,429 articles that appeared to have been authored by federal employees. From that initial list, we conducted a second-stage analysis asking several questions. It is possible for a federal employee to author an article on their own time without federal funds. Even if that article is within the scope of the employee's area of expertise, that is not a work of government. It has to be conducted in the course of their official duties to be considered a work and free of copyright. A question we had was whether articles were properly marked as being devoid of copyright, as required by law.

Our analysis allowed us to sort the 1.2 million article citations two ways. First, because they used Digital Object Identifiers, we could determine how many possible works of government were from which publishers. One corporate branch of Reed Elsevier, for example, had 293,769 articles, whereas the American Medical Association had 5,961 articles. In addition, because we had

entered search terms by agency, we were also able to pull articles by agency. For example, we had found 20,027 articles by employees of the Army Corps of Engineers and 45,301 articles from the National Institutes of Health.

For each of 29 major publishers, a statistically valid sample of articles was extracted, ranging from 50 articles for smaller publishers to 500 for the larger ones. The same process was conducted for each of 22 government agencies. All told, we pulled approximately 10,000 articles and performed a manual verification on each, looking for evidence of copyright assertions on the title page, examining the accuracy of our search results for false positives, and looking for indicators of the "officialness" of authorship, such as authors thanking their colleagues at work for their reviews or, conversely, indicating that the work had been conducted before they entered government service.

The results were pretty clear. Most of the articles we found were almost surely works of the U.S. government and in almost no cases was a proper disclaimer of copyright provided by the publisher. In most cases, the articles were carefully hidden behind a paywall and were certainly not available on the government's web site and it was clear from an examination of the National Archive records disposition schedules for each agency that the Archives didn't have a copy of these articles either.

The large-scale bibliographic search worked for most scholarly disciplines, but of course not for the legal profession which prides itself on willful ignorance of technology. The legal literature is, as a general rule, locked down so tight with exclusive vendors that it doesn't make it into the general-purpose bibliographic search engines. However, I really wanted to know what the practice was in law journals, because this came down to a question of law. I asked law students around the country, led by one of my volunteers, Misha Guttentag from Yale Law School, to pull up some of the major law journals issue by issue and make spreadsheets with lists of articles that looked like they were by federal employees.

In addition to the university law reviews, another major powerhouse in legal publishing is the American Bar Association. I assigned that task to myself and manually examined several decades of articles across a few dozen different publications. I found 552 articles that sure looked like they were by federal employees, possibly in the course of their official duties.

An example was a Commissioner of the Federal Trade Commission briefing the antitrust bar on the agency's regulatory actions and reforms for the upcoming

year. Other examples were military officers getting an advanced degree in procurement law as part of their official duties and writing a journal article to obtain their degree. In none of these cases were articles identified as works of government.

In addition to searching the general purpose scholarly literature and the legal literature and amassing a large body of evidence, I was digging deep into the legal literature to understand the genesis of the works of government clause and how it had been interpreted by the courts. I was able to trace the genesis of this clause to the Printing Act of 1895 and the controversy raised when a Senator attempted to assert copyright over a compilation of papers from the Presidents. I then showed the subsequent legislative and judicial history of the clause as it was made part of the Copyright Act of 1909 and then interpreted by the courts and in subsequent laws.

I Go To The Bar And Am Asked To Leave

I had come up with a strategy to walk this issue out the door. That strategy consisted of bringing a resolution before the American Bar Association's House of Delegates. To do this, one normally must be a lawyer, but two of my board members are members of the ABA, and my thought was that I would write a paper with them as co-authors presenting the issues, and we would present a resolution before the House of Delegates, asking the ABA to endorse the idea that we should all follow the provisions of copyright law. It seemed like a sensible proposition.

As a non-lawyer, I had been able in 2016 to address the House of Delegates by obtaining what are known as "special privileges of the floor." The topic that year was a resolution about access to standards incorporated by reference into federal law and the ABA had proposed a solution that would have made these technical laws available, but only as so-called "read-only access," which meant no one could actually access the law in a useful format without paying money. Under this system, one still could not speak the law without permission from a private party. I opposed the resolution, as did the standards bodies who were against any free access at all. Because we both opposed the resolution, the sections sponsoring the resolution felt they had done a Solomonic feat of splitting the baby in half. They passed their resolution over my strident objections, but at least they gave me a voice.

My thought was that if there were a robust discussion of the issues within the framework of legal publishing being also presented, but with the broader implications of all scholarly knowledge and education, perhaps the ABA would look at this as an opportunity to take a stand in favor of obeying the legal requirements of the U.S. Copyright Act.

I spent the spring working on that scholarly paper on works of the U.S. government, and ended up with 15 pages (the maximum allowed) with 69 footnotes that presented the results of our audit and traced the genesis and application of the law. The resolution was quite simple, saying that if an employee wrote a piece in the course of their official duties, a copy of that article should be deposited with the Government Publishing Office. This was already a requirement for government-printed publications, and we would have simply extended that existing mechanism to cover these journal articles.

The second recommendation of the resolution was that publishers (including the ABA) should properly label any works of government upon publication, indicating which portions were not subject to copyright as required by law. Again, this was an existing requirement, not some novel or radical change. The resolution was prospective: it applied to articles published in the future and did not address the extensive backfile that had been mislabeled.

My resolution was submitted to the Committee on Rules and Calendar, and I went through an extensive process of revision to meet their very precise rules. For example, though I was an associate member of the American Bar Association, only full members had the right to submit a resolution for consideration on the floor. Not being a lawyer admitted to practice, I did not qualify. I began by putting myself down as the sole author of the paper (which I indeed was), and when that was rejected, put my board members and myself as the authors, but that was also rejected. Only when I removed my name altogether was that considered acceptable. At the end of the day, my resolution was accepted for consideration, and was scheduled for floor debate at the mid-August annual meeting in New York.

The way the ABA works is there are a number of sections, each with a layer of delegates, officers, committees, and rules. The depth of the various bureaucracies and rule books is really quite impressive. Typically, a resolution is submitted by one of the sections. Though individual members are allowed to do so, it is somewhat rare. When one section submits a resolution, it is forwarded to all other sections for possible co-sponsorship. In the ABA culture, many resolutions are co-sponsored by many sections and most have no opposition.

Note on Code Swaraj

My resolution was accepted in May, but for three months I did not hear from any of the sections. I approached chairs and delegates of many of the sections, such as Intellectual Property, Antitrust, Science & Technology, and offered to discuss any concerns they had. Nobody would talk to me.

Though nobody would talk to me, it turned out there was a lot of talking going on. The week before I was set to go out to New York for the meeting, I received an urgent communication saying my presence was necessary on a phone call to discuss the resolution. I was told that it could not just be me on the call. A true ABA member whose name was officially listed on the resolution must also be present on the call as I evidently required adult supervision.

We did the call. It lasted an hour. It was not pretty. On my side was Tim Stanley, one of my founding board members and an ABA member, and a volunteer from Yale Law School, Misha Guttentag. On the other side were eight angry members of the bar association, including representatives from the Intellectual Property, Antitrust, Science, and Administrative Law sections.

Their position was clear. We must withdraw the resolution or we would feel the full wrath of the bar on our heads. The representative from the Antitrust Section said he had looked at the 75 articles I had uncovered from the Antitrust Journal and he could vouch that every single one of those articles had been done by the employee on their own time and were not works of government. I expressed incredulity at the idea that every single one of those articles was private property, but he was adamant. I counted at least 17 publications in that list by sitting Commissioners of the Federal Trade Commission, and am perplexed at the idea of how a sitting member briefing the bar on FTC enforcement priorities could be anything but "in the course of their official duties."

The lady from the Science section said that if I brought the resolution to the floor, they would make a big stink about my conflicts of interest. My jaw dropped a bit and I asked what conflicts those might be. She said I had spent my whole career trying to make government information available and I was in litigation with Georgia, so I was self-interested but had failed to disclose these conflicts. She made it sound really dirty and sordid and it was clear she would bring that attitude to the floor.

The Intellectual Property section representatives really went to town, indicating that I had got the law totally wrong because although perhaps the words of the employee were a work of government, once it was typeset in a font with page numbers and such, the publisher had an additional veneer of copyright

surrounding the perhaps public domain core. It would thus be impossible to make the work available without violating the publisher's copyright. I believe this is nonsense and not supported by the U.S. Copyright Act. There is no copyright in font selection or pagination, only an actual co-author of a paper is entitled to share in the copyright.

Now, I didn't just make up my discussion of the law. It was based on intensive research and reviewed by a distinguished panel of copyright experts that joined my advisory board for this project. I was pretty sure we had the law right. We weren't just making this stuff up and blowing smoke.

It was clear they were going to drag us through the mud in a floor debate. I would have been fine with that, but it was worse. They informed me that at least eight of the sections had already instructed their delegates to oppose the resolution, so no matter how eloquent or persuasive I was, the vote was already cooked. I think they were wrong on every single item of substance, but I believed them when they said we would get slaughtered on the floor of the House of Delegates if we had the temerity to appear. I saw no win in this and cancelled my trip two days before I was supposed to fly to New York.

Money Troubles Surface Once Again

I might have gone forward with the massacre on the floor of the House of Delegates, but I had a second issue that came up. I had been very careful with our $250,000, having spent only two thirds of the money. My thoughts were that we would ramp up spending after the ABA meeting and how we ramped up spending would depend on how that all went. In early June I had submitted my report to the foundation. They were supposed to make our second payment on July 31. I didn't hear back from my program manager or the foundation grants staff after submitting the report, so I checked in a few times to ask if the report was OK, if we were on track. Looks good is what I heard.

As July 31 neared, I checked my bank account frequently, but no deposits. Then, two days before their payment was due I got a note saying they wouldn't be making the payment. The reason was we were in noncompliance on the grant because we hadn't spent enough money. I was to submit detailed budgets explaining where we had deviated from the forecast and, more importantly, exactly where we would be spending the money by detailed categories. There was no indication if I successfully spelled out in detail our future plans if the second payment would be approved. In other words, we had shifted from that

key issue of retrospective reporting to prospective approval, effectively running our organization.

I proposed a compromise, which was that we unwind the deal and go our respective ways. I'd keep the money we already had, we'd report on how the $250,000 was spent, and the grant would be terminated. They would keep the remaining $650,000. It simply wasn't a good fit, the foundation would do better investing in large organizations with a sustainable plan for stable revenues and professional development officers.

Dealing with foundations has always been tricky for nonprofits that work in my space. I've had many conversations with my peers who run operations-oriented Internet organizations, and the search for money to further the mission is unending. Many foundations are quick to fund things they have on their own agendas or grand plans, perhaps a workshop the program manager at the foundation has dreamed up, or some software they want to see happen. But, when you go to some of these folks and tell them what you are already doing, all too often they say "we want to fund something new, not some existing project."

It is hard to sustain a long-term focus on a specific and difficult goal when everybody wants to be in the "new" business. This is a problem not just for nonprofits, my friends in Silicon Valley who have startups have a similar issue with investors who want to vault in and use their company as a playpen for ideas instead of wanting to fund the people and work that are already there. They all want a shiny new unicorn instead of feeding an existing work horse.

Public Resource has been lucky. We have received our money from two places. First, several far-sighted foundations have been in our corner for years, such as the UK-based Arcadia, a charitable fund of Lisbet Rausing and Peter Baldwin. We received an early grant from Omidyar Network and when Google awarded five $2 million prizes for "ideas for changing the world" to celebrate their 10th anniversary, we received one of those gifts.

The second source of funding are people who made some money in the valley and want to give back, people I've known for many years. For example, Alexander Macgillivray was an early lawyer at Google, then became General Counsel at Twitter. He left Twitter to become Deputy Chief Technology Officer of the United States and just before he started his government service he instructed his donor-advised fund to send us a $10,000 check. Then, after he left the Obama Administration, he sent us another one.

Likewise, Gil Elbaz and his wife Elyssa, a former Assistant U.S. attorney, have supported us every year since we started. Gil's company had been purchased by Google just before the IPO and they have been quite generous with their winnings, funding a variety of important nonprofits.

I put these names on my "about" page for Public Resource, along with the names of the nine law firms who represent us, our contractors, and our board. As a non-profit, like a government or any other public organization, I feel we have an obligation to be fully open about who we are and where we get our money and I practice what I preach. We have stringent conflict of interest, whistleblower, use of funds, financial controls, and other corporate policies and have received a Gold Seal from GuideStar, a nonprofit monitoring group.

Even with this generous support, money has always been tight. In 2016, I furloughed myself for eight of the 12 months in order to pay my contractors. I had been happy to be back on salary for 2017, but after the foundation flaked out, I once again called the payroll company and told them we wouldn't be paying my salary from December on.

One of the reasons I don't hire a large staff (indeed, I'm the only actual employee) is because the money has always been irregular and by keeping our core expenses very low, we can survive times of drought.

Make no mistake about it, though. While I may be the only employee, Public Resource is a real honest-to-god government-certified non-profit organization operating at enterprise scale and serving millions of people. We have always had a distinguished and very helpful board of directors, some of the best contractors in the business, and because of my deep roots in the Internet, I'm able to take advantage of hosting, offices, and other facilities that would make any well-funded Silicon Valley startup envious.

When we do receive large grants, rather than hire up lots of staff, I spend the money on capital expenses, such as the $600,000 spent buying U.S. Court of Appeal opinions, the $250,000 spent buying public safety codes, or the $300,000 spent paying the Internet Archive to scan 3.5 million pages of briefs from the Ninth Circuit of the U.S. Court of Appeals dating back to the court's founding in 1891.

Note on Code Swaraj

Why I Print

Many people have suggested that I use "crowdsourcing" platforms such as Kickstarter to raise money. I've tried that a few times, but it has never been very successful. Platforms like Kickstarter work best when you are promising people some brand new piece of hardware or a book or some other concrete thing not available in any other place. General support for a good mission, even if you give out books other prizes as part of the campaign, have a tough time in that world.

I've also tried doing appeals for small contributions during the holiday giving season, but frankly, there are many other more compelling places I would recommend people put their individual contributions, from network operations like EFF or the Internet Archive to the many, many compelling charities "in the real world" such as food banks, disaster relief, and much more.

Crowdsourcing campaigns are an awful lot of work, be they for fundraising or to garner attention on an issue, such as PACER fees. I've found it more effective to put that work into my own printing efforts, which are typically very targeted instead of mass appeal. For example, after we converted the Building Code of India into HTML with far better graphics, I printed a nice 2-volume hardcover with beautiful dust jackets and in-line historical prints from Indian buildings. It was designed by Point.B Studio, and I only printed a dozen copies, but they were spectacular.

Those copies went to people like Sam Pitroda and the Bureau of India Standards to show them the potential of what I was doing. I wanted them to see I was serious about this, that the effort was for real, that all this work led to concrete improvements.

Likewise, after I created a bootleg version of the Delaware Corporate Code, which in theory has a jail sentence for unauthorized production without permission from the Secretary of State, I sent those copies to the Secretary of State and the Attorney General to bring the issue to their attention. Despite a personal contact through a friend with Beau Biden, the incoming Attorney General, I never heard back from them.

I've also printed a number of proclamations and addresses, inspired by a practice in India when an elaborately printed document would be presented to a guest of honor. Gandhi, for example, received quite a few of those addresses when he gave speeches. The addresses are ornate, inscribed, framed

proclamations explaining the many merits of the recipient. The ones I've seen are quite beautiful and I've got my eyes peeled for a suitable source to scan and post.

When I'm not petitioning, I've also spent a lot of time printing Gandhi posters, which I gave to the Sabarmati Ashram and have presented to people in the U.S. who have helped me on various endeavors. I also enjoy printing postcards of Gandhi, legal figures, and other artwork, and (if I may say so), I'm a bit of a whiz when it comes to custom labels and postage stamps, and I stand behind few when it comes to package assembly.

The reason I do elaborate print jobs is partly because I like to print, but it is also a sign of seriousness. When I worked on liberating state codes, I sent a large-format Proclamation of Promulgation, flat-packed in a red shiny 19"x22" bubble envelope to the Speaker of the House of Georgia. He was not impressed, but he certainly go the message and I'm pretty sure he figured out that I wasn't going to simply go away if he didn't answer. I also sent the same proclamation to a lawyer I knew, and he was so impressed he agreed to represent Public Resource pro bono on the case.

An elaborate print job is more likely to be noticed as it is delivered. Simply getting the package delivered to the intended recipient is never a foregone conclusion in the case of senior corporate and government officials. My hope is that the recipient will realize I spent time in preparing the document and will thus perhaps spend time considering the matter.

Some people hate hardcopy or simply don't like what I have to say. When I sent a big box of printed standards with a report and packed it in a box with red, white, and blue crinkle-pak made to look like an American flag, the American National Standards Institute thought I was crazy. Cass Sunstein at the White House told his staff to return the box to sender, and it arrived in a big plastic bag.

On the other hand, I heard from John Podesta's assistant at the White House that the mail delivery staff who bring packages around on carts in the West Wing "got a huge kick" from my packages. The Archivist of the United States loved the package and shot me email saying it was "quite the elegant presentation." Congressman Darrell Issa was blown away by the American Flag made out of crinkle-pak and tweeted a photo. The Chairman of the Federal Trade Commission, Jon Leibowitz sent me a note that he loved the packing job and was doubly impressed that the popular blog Boing Boing had covered the

story, printing my Memorandum of Law on the subject. Who knew the Chairman of the FTC reads blogs?

Access To (Almost) All Human Knowledge

Between the funding blowing up and the ABA kneecapping me, my heart was not in the writing of my report on works of government and dispatching my findings to dozens of publishers accusing them of breaking the law. There was another reason though. I had been reconsidering my strategy.

In undertaking this research, I had three big questions. The first was the legal analysis of the issue. I had completed that. The second was identifying works of government. Again, we felt comfortable with our diagnosis. The third was obtaining copies of the journal articles. My initial thought was we would get libraries to allow us to borrow journals and then have the Internet Archive do the scanning. Most of our budget for the grant was based on funds to libraries and the Internet Archive to accomplish this mammoth task.

Pulling articles one by one would be hard. Libraries are somewhat risk averse, though at least two were willing to consider the proposition. But, these articles are all in databases and are available electronically, so scanning is really kind of superfluous. One can't simply log onto the publisher's site because of the stringent legal terms of use and technical prohibitions that lock down this scholarly research so it may only be used in limited ways.

A young scientist from Kazakhstan, Alexandra Elbakyan, had a similar problem, as have many of her peers and colleagues throughout the world. Knowledge has been locked up, colonized so the rich at a few fancy universities have unlimited access to knowledge, but much of the world is deeply constrained. Alexandra did something about this and created a system called Sci-Hub, based in Russia, with access to over 66 million journal articles.

Sci-Hub has proven to be wildly useful for scientists throughout the world that were previously unable to access the scholarly literature. In 2017, the top downloads from Sci-Hub came from China, with 24.9 million articles accessed. Second was India with 13.1 million downloads. Third was the United States, with 11.9 million downloads, clear evidence that access to scientific literature is constrained throughout the world. Brazil, Iran, Indonesia, Russia, and Mexico also make extensive use of this database.

The publishers were not amused and have gone after Alexandra with the full fury of executives defending excessive perquisites and ill-gotten gains. Publishers deserve recompense, but inappropriate copyright assertions and other legal shenanigans have made their current moral posture very dubious. They sued her in New York and got a default judgement for millions of dollars and have obtained court orders against her to try and remove domain names, Internet service, and the like. Additional suits are pending.

I've never met Alexandra. I have some friends who know her, but we've never communicated. I saw her interviewed on YouTube once. She seemed very poised, and also very young. And also very brave.

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In April, I came into eight disk drives, each with eight terabytes capacity. On the disks was all human knowledge, or at least a substantial part thereof, a significant chunk of Sci-Hub. I moved the data onto two disk arrays. Each disk array had eight drives and was set up so I could lose two drives on the array and still not lose any data. This process took a couple of months. I spent another couple of months examining the data. I then moved the arrays out of my office to another location.

My purpose in examining this data was initially for the works of government project. I was using the database for a transformational purpose: examining it to determine if articles were in fact in the public domain and perhaps extracting those components that were in the public domain for broader dissemination.

It also seemed important to me that people stand up and support what they believe in. So, I went on Twitter and told the world what I had done and why I was doing it. The words needed to be said. I have attached those tweets as an appendix in this book.

I had promised myself I would write up our works of government research results in December, but I didn't. Instead, I worked on Gandhi scans and thought about a term that had been rattling around my head for several years.

That term was "Code Swaraj." How I got to that term was a long and winding path, and the beginning of that road was spent in the swamplands of Washington, D.C.. I've spent four stints in Washington, D.C. totaling 15 years. I love the city, but am always glad when I can escape. In 2007, I had just escaped again.

Note on Code Swaraj

FedFlix, My Time At The Movies

Making the accessible law was something I had started work on when I founded Public Resource. I had thought about doing the law in the 1990s, but it seemed too hard, so I focused instead on big databases like patent and the SEC. But, after working for John Podesta in Washington, D.C. for a couple of years as his Chief Technology Officer at the Center for American Progress, I told John I thought I'd be more effective running a small nonprofit. I moved back to California, asked my friend Tim O'Reilly if I could rent an office in his headquarters, and set to work. That was in 2007.

At first, I wasn't sure what I was doing. I spent considerable time working on video, sending volunteers into the National Archives to copy thousands of federal videos and posting them as part of our "FedFlix" program. I also set up a joint venture with the National Technical Information Service for more videos, telling them if they sent me their VHS, Betacam and Umatic tapes, I'd digitize and send them back with a disk drive of the digitized videos, all at no cost to the government. Free help.

After I started that, I met a new Obama appointee who was an assistant secretary of Defense. The military had a great database of videos and a system where a member of the service could request DVDs to be cut and sent to them out in the field. Most of the videos were declassified training films and historical materials, such as a great history of aviation. I got him to send me 800 DVDs. Some of the old Army films about how electricity works are extremely popular on YouTube and I am constantly getting comments about how a particular video explained the subject far better than the class the viewer was enrolled in. All told, we ended up with 6,000 videos on the Internet Archive and YouTube and have had over 72.3 million views.

When I started posting these government videos, my YouTube channel started getting "Content ID" matches. When a content producer uploads their own videos, if they are a major media outlet they can instruct YouTube to search the system for any other videos that are identical, in whole or in part. When a match is found, the content producer is able to flag the other person's video and issue a formal takedown notice.

If you get one of these takedown notices, you are locked out of your account until you go to "Copyright School" (which consists of answering a bunch of questions about what is legal and what is not). If you graduate from Copyright School, you are let back in your account but it functions with reduced privileges

until your legal peril is resolved. If you in fact receive and cannot defend three strikes, your account is cancelled. When you get a strike, you can at that point protest the takedown notice with a counter notice, which is actually a formal legal notice to the other party. At that point, they can bring you to court because you have refused to remove their purported property.

The problem I encountered was that several hundred content providers decided that any match whatsoever was a violation of their rights, even if the material is already in the public domain (as is the case when government videographers film something but a network also films the same thing). In most of the cases where I received takedown notices, the producer was mistaken as to the ownership of the material or had granted the government perpetual license to use the material. In other words, these were works of the U.S. government.

For the first few years I started posting video, I spent considerable time beating back these false claims. By 2011, I had beat back 325 Content ID claims on 5,900 videos. Only two of those were actually copyright violations: a 1927 silent film about Thailand and a 1940 Time, Inc. film that had been deposited in the archives with a donor restriction. The rest were all free and clear. I wrote up my results and sent them to David Ferriero, the Archivist of the United States.

Since 2011, the channel had been fairly quiet on the takedown front, though it continued to rack up millions of views. We had one dustup in 2014 over a Bob Hope Christmas special. The producer who ran Hope's video company after he passed away got quite nasty with us and refused to back down. He claimed that the government had only received limited rights to use the Bob Hope Christmas Special, even though it was produced on an Army base in Vietnam at great government expense. I couldn't find the initial contract they had with the government, so I removed the video.

Since I created the channel in 2007, people have spent a total of 207,066,021 minutes watching FedFlix. That's 394 years of viewing time, not bad for videos that were previously sitting gathering dust in vaults.

My Island of Tears

It was thus a surprise in December to be sent back to Copyright School, this time over a formal takedown notice over a film produced by Charles Guggenheim called "Island of Hope, Island of Tears." This beautiful story of Ellis Island and immigration to the United States was narrated by Gene Hackman and was being shown by the National Park Service. I had put the

video online in 2008 after the National Technical Information Service sent me a videotape to digitize, and it had received over 80,000 views. The National Park Service even had a page about the film and pointed to the copy I had placed on the Internet Archive, encouraging teachers to use it in their classes.

The takedown came from a Washington socialite, who was the producer's daughter and was running the company after he had passed away. She was adamant that we were defiling the work by showing a poor copy online, it was only meant to be shown in theaters run by the National Park Service, and she accused me of taking money out of the pockets of the National Park Service by placing it online for free.

I looked carefully at the closing credits, which said it was produced and directed by Guggenheim and "Presented" by the National Park Service. I completed my Copyright School, and removed the video from public view both on YouTube and the Internet Archive, and apologized for any misunderstanding. But, I was perplexed.

I noticed that Guggenheim Productions was selling this video on Amazon, so I ordered myself a copy, then sent a note to David Ferriero at the National Archives and he evidently sent it to his motion picture division, because after about a week I got a note from a senior archivist. He enclosed a copy of the contract between the National Park Service which clearly stated this was a work for hire and the filmmaker "retains no rights in the work." Not only that, the production company had been paid $325,000 in taxpayer funds to make this film and, as best as I could tell, had also received a gift from American Express to aid in the making of the film. They were also selling it on Amazon and were asserting copyright and pocketing the proceeds.

In other words, the takedown notice they sent me was null and void, there was no copyright. Before YouTube would accept their initial takedown, the producers had sworn under penalty of perjury that they were the rightful owners of the film. They swore under oath they were aware they could face legal penalties if they submitted a false takedown notice. Indeed, they had to check five checkboxes, each containing a legal oath, in order to claim I was violating their copyright. Perhaps they were just being stupid, but they caused a lot of trouble by calling me a criminal. I did not appreciate it.

In addition to sending me the contract, the National Archives said they'd send me a high-definition video file. I made the YouTube and Internet Archive videos I had go live again and grabbed the Amazon DVD and ripped that and posted it.

When the disk drive from the National Archives arrived, the 28 minute video was on a 163 gigabyte file, about as good a video as you're going to get. I posted that as well. I also used the uncompressed high-definition video file to pull out 276 still images which I posted to Flickr as copyright-free stock footage, which impressed the National Archive staff as a new and interesting use of the materials. I'm continuing to work with the National Archives, which has said they will be able to furnish me more of these reference prints they've digitized from film.

Many people think copyright is a cut-and-dried issue, a binary proposition in which the "owner" is wronged by making use of "their" content. My experience beating back false copyright assertions had taught me that many people claim content that is not theirs and it is important for their claims of ownership to be subjected to scrutiny, particularly where there is strong evidence that the work is a work of government.

The Accidental Congressional Video Archive

I actually backed into FedFlix. My initial video interest was in congressional hearings. When I worked for John Podesta, I spent a couple of years putting together a plan for what I called "Eye-Span," a quest to get all congressional hearings online with broadcast-quality video. I sent reports to Speaker Nancy Pelosi pressing the point and had numerous meetings with Congressional staff.

In 2010, I talked the incoming Republican majority in Congress into letting me help them put congressional video online. Speaker John Boehner sent me a letter on his first day in office asking me to assist the House Oversight Committee to put their complete archive online. I was able to get them to send me hearings and transcripts immediately after the hearings ended and taught them how to not only post high-quality video in multiple places, but to add closed captioning for the hearing impaired. This meant we had a high-quality feed of all current hearings, a first in the House.

My agreement with the House also allowed me to have the archives of the House Oversight Committee, but when I went to the House Broadcast Studio and asked for their help they told me they were busy with more important things. I volunteered that perhaps I could copy the data, but they told me this was all in a professional format and I couldn't possibly handle that. With a little bit of cajoling from me (and a phone call from the Committee Chairman) they said

they'd send me a test disk to see if I could read it. When it comes to video, I haven't just fallen off the turnip truck and I could indeed read their disks!

What happened next was kind of amusing. House Broadcast sent me a binder by Federal Express with 50 Blu-ray DVD discs in it. I opened it up and looked at it, and it sure looked like not only was the data I wanted for the House Oversight there, it appeared there was data for all committees, with over 600 hours of broadcast-quality video in the binder.

I promptly ran out and bought six Blu-ray readers and hooked them up to my Mac desktop and copied the data, six discs at a time, and sent the binder back by overnight courier to Washington. I called my contact back the next day, thanked him, and asked casually if they had any more. "Sure, we have lots of this stuff. Would you like another?" So, they sent me another binder.

All that summer, they kept sending me more and more binders. I'd copy them and send them back. When those were done, I bought a ticket to Washington and asked them if they had anything else. Turns out they had a pile of disk drives stuffed behind the equipment racks, so I bought packing tape and boxes from the FedEx store and brought them down to the basement of the Rayburn Building and packed them all up for shipping.

By the end of the summer, I had about 14,000 hours of video from congressional hearings. I then found myself in a meeting with the Speaker's general counsel to discuss plans for going forward. I had offered to hook the Congress up with a 2.4 gigabit line directly from the basement of the Capitol, out to C-SPAN, and then onto the Internet 2 backbone. That would have allowed for broadcast-quality video to be livestreamed to the entire country simultaneously from 48 concurrent hearings, allowing the Internet Archive, YouTube, local news stations, and others to access the proceedings of Congress.

I even spent $42,000, money intended for other purposes, on dedicated hardware encoders and ethernet switches and had mounted them all in a rack and brought photographs of the setup with me. I explained that this would all be at no cost to the government, the hardware already existed, we could have this entire thing up and running in 90 days. It was ready to go.

We even knew the precise location in the basement of the U.S. Capitol where we would patch the incoming fiber over to the video feeds from the House Broadcast Studio. Our meeting was in September 2011, and I told the staff we could have them up and running by January 2012, in time for the opening of

the second session of the Congress and a brand new era of progress under the dynamic leadership of their boss. I told them they'd be featured on every local TV station in the country if they brough high-resolution video directly into the newsrooms of America. I called it a public-private partnership, said it was a win-win situation.

While in the office, I mentioned as an aside to the Speaker's staff that the House Broadcast Studio had sent me all of Congress by mistake. It was a surprise to them since they thought I was working on a single committee. I suggested that since we had no formal operating agreement on this subject and because the data was works of government and in the public domain, that perhaps nobody would have any objection if I posted this data. I left them the photographs of the rack I had built for them and lots of detailed charts and tables about the system.

Well, turf is a funny thing. The Library of Congress has an extensive (and expensive) audio-video facility they built in Virginia. The House has an extensive staff in the broadcast studio and in the administrative bureaucracy. The Library staff felt very strongly that all this was their job and that they were going to have done this eventually. Or were going to do so well once they actually started doing it. In any case, it was clear they didn't want me doing it.

So, they cut me off at the knees. Congressman Lungren, Chairman of the Committee on House Administration, issued an order saying I was to have no more data. The Library installed a really cheesy low-bandwidth streaming solution and took great pains not to make the full archive publicly available. It was better than what they were doing previously, which was nothing, but it was still pretty bad. I was out of business, stuck with a bunch of hardware, which ended up in the local e-cycling facility at the local dump six years later. What a waste.

The most surreal moment was when I found myself meeting with lawyers for the Committee on House Administration. They whipped out a piece of paper, an agreement saying I could use the data I had already obtained but only if I got the permission of each Committee Chairman before releasing that Committee's video. They wanted me to sign the agreement. I refused.

My 14,000 hours of video now lives on the Internet Archive and I was able to go through the video and have found metadata for 6,390 hearings. I also posted all my exchange of email and letters with the House, including the silly agreement that I didn't sign.

Note on Code Swaraj

The Courts Call the FBI on Us

Video was fun, but it wasn't my main focus. That was the law. The law is what led me to a deep study of civil resistance. I began with case law, working with Harvard professor Larry Lessig to purchase all the U.S. Court of Appeals backfile from a vendor and posting them on the Internet. The archive cost us $600,000, but it was the first time these opinions were available for access without charge on the Internet. It was worth it.

After we did the U.S. Court of Appeals, I turned my attention to the U.S. District Courts, which ran a system called "PACER" (Public Access to Court Electronic Records) which provided access to briefs, opinions, dockets, and other materials, but at a charge of eight cents per page (now up to 10 cents per page). This seemed really stupid to me, so I put together a system for recycling PACER docs, with an extensive set of "Frequently Asked Questions About PACER" which went through the economic and technical flaws in this awful system.

This was in 2008, and soon my phone rang. On the line were a student from MIT named Steve Schultze and his buddy Aaron Swartz, at the time a freelance force of nature. I had known Aaron since he was 12 and was a protege of Larry Lessig and a frequent attendee at industry get-togethers. Aaron and I had worked together on various issues such as the IRS and he worked closely with my ex-wife, Rebecca Malamud, putting together the Open Library system for the Internet Archive.

Aaron liked my FAQ and decided to use the library system to start recycling at scale. Steve had written a simple PACER crawler and Aaron wanted to apply that. The courts had just set up an experimental service in 20 libraries around the country to see if "ordinary" people might want to use PACER. This was a bow to increasing pressure from Congressional officials who wanted to know why they kept getting letters from people asking about PACER. The courts thought a 2-year pilot investigation might be an easy stalling action.

Aaron took Steve's code and wrote a bigger crawler. He also noticed that authentication for access on the library system was based on a "cookie," which meant that the librarian would log in once at the beginning of the week at the terminal and then anybody could sit down for a week and use PACER. I'm still not sure exactly what Aaron did here, but I think he sent a buddy in once a week to the Sacramento library and copied the cookie and mailed it back to him. In any case, he got a cookie good for a week and was able to use it to crawl the system.

A few months later, I got a note from Aaron saying he had some data, could he have a login on my server. I don't usually do that, indeed had never given anybody a guest account on my systems, but Aaron was special and so I gave him an account, and didn't think much about it. Then a month or so later we noticed that he had uploaded over 900 gigabytes of data. That was a lot. But, he was a bright guy, so I wasn't totally surprised. I made a note of it and didn't think twice as we had plenty of disk space.

Then the phone rang. Aaron was on the line. The government had abruptly turned off the experimental library system and issue a notice saying they had been attacked and had called the FBI. They had shut down the entire 20-library trial. They were talking about having been hacked. This was serious.

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Two things happened then. First, I got a lawyer and told Aaron to get a lawyer. We looked at what had transpired, and it was my strong opinion we had done nothing wrong. We had not violated any agreements or terms of service. Sure, the courts weren't expecting somebody to grab 900 gigabytes of data from a public terminal, but as I told the FBI, "it isn't a crime to surprise a bureaucrat." This was public data and we got it from a public facility. We were clean.

The second thing that happened is I started to scrub the data hard, looking for privacy violations. I found thousands of documents that disclosed, against the court rules, personal information such as Social Security Numbers, names of minor children, names of confidential informants, the home addresses of law officers, private details of medical conditions that should never have been disclosed.

It took me two months to do this work. The audit results were written up and certified letters were sent to 32 Chief Judges of district courts. They initially ignored the audits. But, I kept sending them out, and by the third time I sent out notices I was stamping in big red ink "Third and Final Notice." A bit cheeky in a letter to a Chief Judge of a U.S. District Court, but it did get their attention.

The U.S. Senate also took notice and sent a strongly worded letter to the Judicial Conference of the United States. The courts made a few minor changes in their privacy practices, and a few judges, to their credit, started taking the issue seriously. For the most part, though, we didn't get anywhere. The free access pilot remained terminated. The courts raised their rates.

Note on Code Swaraj

The FBI staked out Aaron's house and tried to get him to come down for interviews, but he refused. The FBI told the courts we had done nothing wrong. Then, after the New York Times wrote the story up, the courts called the FBI again and asked them to take a second look. Again, there was nothing to see there and the FBI told the courts to move along.

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This is when I began to study civil resistance seriously. I knew we weren't facing the kind of dangers that Gandhi and King faced. There were no law officers and vigilantes threatening me with physical harm. Access to the text of the law is a much more mundane issue than the fight for social justice. It is not like the liberation of an entire people.

But, our work was an attempt to change how the system works, and I knew we had much to learn from those that went before us. I also wanted to know more about how to make change effective. Beating one's head against a wall or tilting at windmills doesn't make change. I wanted to know more about how this was done in the past, how we could move from complaining about the present towards creating change in the future.

That study grew even more serious by 2011. I was no longer doing case law and had started to focus intently on technical standards required by law. The private parties who thought they owned these laws had million-dollar salaries at stake and were clearly going to fight hard. I had not been sued, but I knew there was a lot of angst inside some of these nonprofit standards bodies and they were digging in to fight change at any cost.

Something else happened. Aaron got arrested. He had downloaded a large number of scholarly articles from a system called JSTOR. He did this out of MIT where he had guest privileges, and MIT called the police instead of doing what one usually does with precocious students like Aaron, which is call them in for a lecture. I called my friend Jeff Schiller who used to run the MIT network and that's exactly what he told me. It wasn't on his watch though, somebody new was running the operation, and once the police got called, there was no going back. What was done was done.

The police handed it to the U.S. Attorney who decided to make an example of this case, and charged Aaron with 13 felonies. The consequences of these charges was huge fines and decades in jail. I think just as terrifying for Aaron was the idea of being convicted of a felony and losing his right to vote. A typical

post-release condition for a so-called hacker is also that you can't touch a computer or the Internet, a horrifying thought for somebody like him. The U.S. Attorney was bound and determined to take this all the way, and told Aaron's attorney there would be no plea bargain without a jail sentence.

What Aaron had done was simply download a large number of articles. Downloading articles was allowed on the JSTOR service. Any student was allowed to read JSTOR journal articles as part of the campus-wide service. The problem was that Aaron was reading too fast. It still baffles me that this became an allaged crime.

Aaron didn't release those articles, though it was clear that is what the U.S. Attorney was convinced that this was what was about to happen. I was not so convinced. When Aaron downloaded PACER docs, he handed them to me to scrub and release. He didn't run servers, he leaned on people like me and Brewster for that. He had made no move to release the JSTOR data.

Perhaps he would have also taken steps to release those articles at some later date, but there was no evidence that he would have done so and he certainly would not have taken those steps without working with somebody like me or one of his many other friends on the net.

He had previously downloaded a large number of law journal articles from West, and he didn't release those either. Instead, he did a big data analysis on the articles and co-authored a seminal paper showing how law professors often received grants from corporate interests to write favorable articles on their issue, such as legal liability for pollution, and those articles were then used in court cases.

Aaron told Clay Johnson, a close friend of both of ours, that he was going to analyze the JSTOR articles for evidence of corruption in climate change research. Aaron's words to Clay after he were arrested were, as best as Clay can remember the conversation several years later, were "sure, the data should be free, but I just wanted to do a fucking analysis of funding for climate change articles." That sounds like Aaron.

With Aaron arrested and me digging deeper and deeper into the issue of technical standards, I wasn't sleeping well, and I spent countless nights reading. When Aaron committed suicide in January 2013, the entire Internet grieved, especially those of us who had the privilege and honor to work with him. I still grieve.

Note on Code Swaraj

Hind Swaraj

Hind Swaraj was a book Gandhi wrote in 1909. He was returning by boat from London and was about to get much more serious in South Africa, bringing his satyagraha campaign to a startlingly successful conclusion, but only at the cost of great suffering and sacrifice. I think Gandhi was trying to get straight in his own head what he believed. For nine days on the SS Kildonan Castle, Gandhi wrote furiously. When his right hand cramped up, he switched to his left hand. When he published the book, he put in big letters on the cover the words "No Rights Reserved."

The book is a strange but brilliant book. Gandhi had many ideas, some of which made sense to his friends, others did not. Nehru and Tagore never really liked the book. There are some ideas that seem crazy to me today, such as "hospitals are institutions for propagating sins," but even with such a stark statement, one has to admit that Bapu certainly had a point. Even if you don't agree with every word in the book, it presents a compelling catalog of the problems Gandhi thought India and Indians should face, and a compelling theory of how to deal with those problems.

Gandhi posed one answer. Maybe this wasn't the right answer, it certainly was not the only answer. But it was a coherent answer, and it was perhaps his first complete statement about how to effect a fundamental change in the world. He of course continued to state and restate how that change should occur, and the 100 volumes of the Collected Works show the tremendous scope of his writing and how his thoughts evolved. But for me, *Hind Swaraj* has always had a special place on my bookshelf as a powerful message put to print. It shows the power of the pamphlet and why everybody should be a printer to propogate ideas.

Ever since I first read *Hind Swaraj,* the words "Code Swaraj" have been rattling around in my head. The idea of Hind Swaraj, Indian Self-rule, is both a concrete goal and a big goal. Something aspirational, but also something that was attainable. Something real. Something concrete. It is one of the key symbols of the fight for independence. Words matter, and the words "Hind Swaraj" instantly meant something to people who heard it. The words became a symbol of something big, a common purpose.

Gandhi introduced us to other concepts as well. A satyagraha is a struggle, but not simply a vain, meandering struggle against all that is good. A satyagraha is a specific struggle, one with a concrete goal such as the making of salt in defiance of a specific regulation.

A satyagraha requires intense preparation, the people must educate themselves about the issues. A satyagraha requires principle: before Gandhi marched to the sea, he notified the Viceroy of his intent. A satyagraha must stay focused: once the first aim is achieved, one does not extend it. One declares victory, them moves on to something else. Most importantly, the satyagraha campaign must be in the context of an larger goal, such as swaraj.

These lessons went from Gandhi to South Africa and to India. These lessons went from Gandhi to Mandela and Kenyatta and Nkrumah and spread to all of Africa. These lessons went from Gandhi to King and the fight for racial justice in America. These lessons changed the world.

Code Swaraj As A Symbol And Goal

Code swaraj to me means that our rulebooks should be open. The Internet has changed the world, and it changed the world because of open source software and open protocols. Everybody knows how the Internet works if they take time to read the protocol specs, which are available for all to read.

The Internet was not a foregone conclusion. When I started working on the Internet in the 1980s, there were several networks. One was being developed by the powers-that-be under the leadership of the International Organization for Standardization and with support from big corporate and government players. It was called Open Systems Interconnection (OSI), and the model they adopted was the same as we still see being used by standards bodies today. The protocol specifications were developed in a tightly controlled process and the resulting documents were extremely expensive to purchase and could not be copied freely without a license from a private party.

I was writing professional reference books about computer networks during that time, and had to buy lots of those "OSI" documents. I was also writing columns for computer trade magazines and a lot of my columns were about how the high price of standards and the closed process was killing the potential of this new technology.

Meanwhile, an ad hoc group of engineers had formed the Internet Engineering Task Force (IETF). The group was self-organized, and all the protocols were open and freely available. More importantly, it was based on a principle of "working code." That meant you couldn't show up at a committee meeting to standardize some aspects of Internet operation, say for example the format of email headers, without having implemented your proposal. The Internet

protocols were based on things that actually worked, whereas OSI was based on corporate agendas.

My contributions to the Internet protocol suite were minor, but I spent a lot of time at the IETF, and ended up working on governance issues. I was part of a group of radicals that wrested ultimate control of the organization away from government sponsors at the U.S. Department of Defense and other agencies, who were still appointing our supervisory bodies such as the Internet Architecture Board, and moving towards a bottom-up model of governance.

We held fast to core principles, such as people attending meetings represented their own views, not their employers. Anybody could participate, there was not application or membership. I also spent considerable time on the issue of how to produce the documents that made up the IETF database, working with my colleague Marshall T. Rose on an authoring language for standards that is still used today.

The Internet won the fight against OSI. What we found is whenever there was a seemingly intractable problem that could not be solved, our open network always yielded a solution when some random graduate student would come up with a better way of doing things. The Internet scaled beyond on our wildest dreams, but to our credit we took pains not to stand in the way of that growth. The OSI contingent didn't learn that lesson, and they are now a footnote in history.

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Code swaraj has been real for the Internet, though we are now increasingly facing walled gardens. If you use Linux, you can see how your computer operates, but you can't view the source code for your iPhone. The protocol specs for the net are open, but increasingly, services have migrated towards massive centralized cloud services. We continue to battle over net neutrality, yet much of the Internet remains open, and we must fight to keep it that way. Still, the Internet is very much under attack with fake news, abusive bots, and many more symptoms of an attempt to subvert the net and close it up.

We must also set our sights higher than an open net, we must enforce those same principles to other areas of our lives. Code swaraj also applies to the law. How can we be a true democracy when access to the laws by which we choose to govern ourselves is incomplete, technically deficient, and expensive? Even lawyers suffer today from antiquated systems put up by vendors, such as the

company that claims exclusive access to Georgia law but provides that access with technically deficient software and onerous terms of use. Even public systems, such as access to U.S. federal courts, are grossly insufficient, hidden behind an expensive cash register that makes it impossible to perform simple tasks, such as downloading an entire district court to examine it for privacy violations.

I think code swaraj goes even farther than the Internet and the law though, and our fight for the liberation of technical standards is an example of that. Our world is an increasingly technical one, and it is vital that we understand how our key infrastructures operate. Standards represent common consensus on how to do things, and code swaraj says if a standard is to be meaningful, it must be available for all to read and speak. A private standard makes as much nonsense as a private law.

I remember the words of Ela Bhatt telling us that we must be aspirational in our goals. We must work for world peace even if we do not believe it will happen soon, even if we do not believe it will ever happen. We must make the effort.

Access to knowledge is also an aspirational goal. We must work for that. And, just as Hind Swaraj as a goal was coupled with broader aspirational goals about the future of India, I believe we can couple code swaraj with the quest for universal access to knowledge. If we do not have code swaraj, we will never have access to knowledge. If you do not have an open rulebook, you will never be able to democratize information. This is about the people controlling their own destiny in a democracy.

Open Government As a Mantra

I observed from afar an interesting phenomenon when Barack Obama took office. For years, my fight for government information was considered an odd one in Silicon Valley. But Obama brought in a sweeping wave of optimism in the power of technology to make government better. Senior engineers from Google and Facebook gave up lucrative jobs to come work for the White House.

The President appointed a Chief Technology Officer, and I consider all three of the people who occupied that position to be friends. Far-sighted officials such as David Ferriero were given entire agencies to run, in his case the National Archives. The Republicans ran Congress, but even they seemed to want to embrace technology, as witnessed by a liberal such as myself working hand-in-

glove with Congressman Darrell Issa, a conservative Republican committee chairman, to liberate huge amounts of congressional video.

Internationally, tremendous effort was put into an Open Government Partnership by the White House. Officials from numerous countries met frequently and developed open government plans and goals. In the U.S., each federal agency was required to come up with an open government plan. Agencies started being ranked based on how many "data sets" they released to the public. Transparency became the watchword. Open was a goal.

To bring more techies into government service, the U.S. emulated a pathbreaking agency in the United Kingdom, the Government Digital Service, which was bringing modern computer programing directly into visible online government services. The newly-minuted U.S. Digital Service was joined by another group, named "18F," located in the General Services Administration, and staffed with a hundred bright, young, experienced techies. (The odd name for the organization comes from their location at an office building at the corner of 18th and F streets.)

Aaron Swartz wrote an essay around that time, which I have attached as an appendix. He cautioned that transparency as a sole goal was the wrong goal, and I shared his concern. I actually used to bristle when people said I was doing my work because of a single-minded desire for transparency in government. Don't get me wrong. I totally believe in transparency as a means to more effective operation not only government agencies, but also public charities like my own. But, I think it is the wrong frame for what we do. Transparency is a vague goal and standing by itself, it does not reach the specificity one needs to conduct an effective campaign of satygraha. You need more than just sunlight as a goal.

I did what I did because it made government work better. I was interested in revamping how the government made the law available to itself, the bar, and the public. I wanted congressional hearings online because it was a tool for educating students across the country and because it made it easier for congressional staff to run a better congress.

What I found with the open government movement was a large number of well-meaning people thinking they were going to change the system from within. Let me be clear: many of them have achieved much. Look at the miracle job a small SWAT team did to rescue healthcare.gov from contractor hell. But, many people felt that the inside path was a club, if you weren't in the government, you

weren't part of the solution. Many of them hesitated to talk to me, worried it would look like they were embracing struggle and radical change.

I think you need both inside and outside for government to be effective. I am a huge admirer of the skills of the civil service, both in India and the U.S. Go into any mission-oriented agency, and you will be amazed at the depth of technical knowledge and the commitment to public service.

However, we cannot leave government just to the inside. We own our governments, and if we do not actively take part in how they are run, they will not reach their potential. Transparency as a goal is not enough, we must be more specific. Hence, code swaraj. If it's a law, it must be public. This is not transparency for transparency's sake, it is a vital tool for making our legal and technical infrastructures function effectively. That won't happen just from the inside.

For several years, it looked like inside was the only way to do things. The United Kingdom's Government Digital Service got universal acclaim throughout the technical world, but it is now an empty shell after the change in government. In the U.S., the U.S. Digital Service and 18F are struggling to keep the attention of policy makers in the legislative and executive branches. They continue to do great work, and I consider the acting administrators of both agencies be personal friends and deeply admire their sense of public service. But, they need our help from the outside. We can't leave governance just to government. It is our responsibility as citizens.

An Agenda of Knowledge in India

As December comes to a close and 2017 ends, I have spent my days trying to understand what I want to do, and I have come to realize that what I want to do is more work in India. I do so for selfish reasons, I learn so much from this vast and diverse country, one with such a rich history and vibrant people. I also think my work with Sam Pitroda is beginning to make a difference, and through him, I have met so many other people in India who have become what I am sure will be lifelong friends.

I wish to close this book by discussing those, laying out an agenda for future action. I do so to put my own thoughts in order, but also in the hope that others will join with us in this struggle.

Note on Code Swaraj

There are ten areas that I think we can work in. Many of those areas are already underway. I wish to be clear that others may have different, perhaps better, lists. I do not pose these 10 items as any sort of definitive program. I firmly believe when Gandhi-ji said to "be the change," he meant not only that people should act, but also that people should look inwards and should not be telling others what to do.

1. Technical Knowledge. First, of course, is the fight for access to technical knowledge, the standards satyagraha. In this area, the question has been posed, not only in India, but throughout the world. Millions of people have used the standards we have posted, we have informed the citizenry in the U.S. and India, and it is clear there is a great need for this information to be more widely developed.

We await the judgement of the Honorable High Court of Delhi and the Honorable U.S. Court of Appeals, but we must do more than simply wait. We must raise the issue in the minds of people who must use these documents, educators and engineers and city officials and ordinary citizens. Only if we all raise our voices and demand that the technical rules that govern our society be made available will this become real.

2. Public Library of India. Second, access to books is also well underway with the Public Library of India. Much work remains to be done, and there is so much potential in doing high-quality scans of all the libraries in India. For the current collection, much needs to be done to unleash the potential, fixing metadata, finding broken scans, and adding more materials. There is also a crying need to apply advanced optical character recognition to the texts.

Much as I admire the government efforts that resulted in the Digital Library of India, I believe that the entire corpus should be rescanned. In particular, the scanning is at low resolution and there are many missing and skewed pages. This makes the collection incomplete, and it is difficult to do optical character recognition. A large public scanning center located in India that made public domain materials available would be quite useful for making a large volume of educational materials available in all the languages of India. Our current collection is 400,000 books, but my estimates are that a more complete effort would entail scanning several million books. This is a very doable goal and would only take a few years. It would be a wonderful investment in the future of education in India.

When President Obama took office, I approached John Podesta and we sent an open letter to the President along similar grounds. I put the letter on a web site with the domain name YesWeScan.Org, a take on the President's "Yes We Can" campaign slogan. The catchline of the letter was "if we can put a man on the moon, surely we can launch the Library of Congress into cyberspace." Because John was my co-author, the administration gave us a nice reply from Archivist David Ferriero, but nothing came of the effort. I also tried valiantly to get the new Digital Public Library of America to interest itself in such a broad aspirational goal, but to no avail. It is my hope that India will take up the challenge and build a temple of knowledge for educating future generations.

3. Edicts of Government. A third effort, modernizing the official journals of government, seems to be gaining momentum, both within the government and with grassroots support in areas like the official gazettes. But this area will require considerable effort. The back issues of the gazettes must be rescued from behind their arcane technical interfaces. More importantly, going forward, the gazettes, laws, regulations, bylaws, and all the other edicts of government could be made much more broadly available, but only if the government actors charged with promulgating these materials see this as beneficial. We must educate them as we educate ourselves.

There are two efforts we can take to make edicts of government more broadly available. The first is strictly technical, mirroring all the gazettes from states and municipalities, perhaps even going beyond the current online files and scanning historical editions. The programming task to mirror the existing online gazettes is difficult, but with a little sustained effort can be achieved.

Another activity that might prove useful is to gather participants from government, law, and the technical world together for a conference or congress or other assemblage. There are perhaps some legislative changes needed to truly modernize a system of official journals and promulgation of the law, and there are no doubt some administrative and procedural changes that would be needed. Gathering together those in India who work with edicts of government and bringing in others with expertise, such as the folks that put together the UK system, might be enough to spark some concrete steps.

4. Hind Swaraj. A fourth area, documenting the amazing and rich history of Hind Swaraj, is a personal favorite of mine, and I take great delight in continuing to add to that collection. There are some issues even here. There are attempts to assert control over even the works of Mahatma Gandhi, through the use of technical limitations and copyright assertions. The entire record of the

fight for liberation, and certainly all the source documents and the words of the founding fathers, should be available, particularly when the materials were developed using government funds.

Even the Sabarmati Ashram asserts copyright over the works of Gandhi-ji and imposes technical limitations on their use. I must admit the first thing I did when I received the PDF files for the Collected Works was to remove the security restrictions (so people could extract pages from within a volume) and the watermarks, which were on every page and I believe defaced the works.

I have sent a letter to the Ashram asking for unrestricted copies of the materials on the Gandhi Portal to add to our own Hind Swaraj collection, without watermarks and without technical restrictions on use, and I am hopeful to have this discussion with them and others in India who are the trustees of important historical materials. I do understand the reason for some of these limitations, which is a sincere and fervent desire to protect the integrity of the works and prevent them from being misused. But, I don't think locking down these historical works will prevent misuse, they will only discourage legitimate use. I believe we will have this discussion many times over the next few years as we all work towards a common purpose.

5. A Photographic Record of India. The fifth area that I believe we should work in is providing a better photographic record of India. The photos we found on the Ministry of Information servers are low-resolution, yet even those are spectacular. There are numerous photographic archives locked away throughout India, in many cases with high-resolution scans just sitting behind paywalls. There are also astounding collections in locations such as the British Library.

I believe a worthwhile goal is to develop a database of high-resolution photographs, suitable for uses from print to web, and making that database available for use without restriction. This is not hard. The photographic record of the Ministry of Information, for example, could easily be made more readily available and there is no reason to restrict usage.

6. All India Radio. Sixth, I was astounded to find 129 speeches of Gandhi-ji speaking on All India Radio during the last year of his life. Surely, there is much more in the vaults of All India Radio. A few of those treasures have been released as commercial CDs of music or other materials. All India Radio was a key part of the government, and it seems that making those archives available for much broader use would be of great interest.

7. A Video Record of India. Seventh, closely related to the audio archives, are the video archives. We posted the 53 episodes of Bharat Ek Khoj, and it is as popular and relevant now as it was when it first aired. Why not post the Ramayana? Or the thousands of other amazing productions celebrating song, dance, art, and the culture and history of India? Doordarshan, like All India Radio, was a part of the government for a long time. Now, it is an independent agency, but one with a public mission.

In addition to Doordarshan, there are other archives of video throughout India that could easily be made more broadly available. My experience with the U.S. National Archives is that those working to preserve videos are eager to see their work more broadly used. When our volunteers copied 6,000 videos and made them available for over 75 million views, the archivists were thrilled. Too often videos are kept hidden in a mistaken attempt at monetizing the archives, but doing so rarely results in broad distribution or even in any significant sums of money, and purposefully holding our history back does not do proper service to the public.

There is one more aspect of making video, photographs, and audio available in the best quality possible. One of the hardest part of making a film or a news production, or a high-quality magazine article, is finding what is known as "B-Roll" for film or "stock photos" for print. If you're writing a travel piece, you might want a photo of the Taj Mahal. If you're making a movie about India, you might want footage of Nehru. Obtaining these kinds of historical materials is often very difficult.

By digitizing the public core of the historical record and making that information available for free and unrestricted use, the government would be making a nice gift to Bollywood and the news media and to all the small independent filmmakers, writers, and even students that wish to use the materials in their own work. By creating this common public core, one encourages private activity.

Those seven areas are difficult, yet fairly straightforward. I wish to pose three more challenges:

8. traditional knowledge;
9. modern scientific knowledge;
10. the broad aspirational goal of democratizing information.

Note on Code Swaraj

Traditional Knowledge and Biopirates

Traditional knowledge was a new area for me, one in which I had not read widely. For my October 2017 trip, Sam flew in from Chicago and I flew in from San Francisco, and we met in the Delhi airport and went straight to Bengaluru. Our first stop was an Ayurvedic university and hospital where Sam is the Chancellor, an organization he helped found 30 years ago with his friend Darshan Shankar.

Ayurveda is the traditional science of medicine in Indian Sanskrit texts as passed down and refined through the ages, and the practitioners are known as vaidyas. Related to Ayureda is Unani, the ancient medical tradition brought in from the Arab and Persian world and practiced by the Muslim hakims.

While Sam attended to his duties with his board and professors, I walked the grounds. The grounds of Trans Disciplinary University (TDU) are a fascinating place. There are over 6,500 medicinal plants used in India and documented in the ancient texts, and the grounds of TDU has over 1,640 species growing. In an extensive herbarium, over 4,500 species had been preserved and collected.

TDU combines an extensive knowledge of the classic texts and methods with the very latest in modern science. Over 50 Ph.D. students do cutting edge research to try to understand how and why the classic techniques of Ayurveda work (or don't work). The school has recently expanded to include undergraduate education and runs a very large hospital. In addition, TDU maintains a computerized database of 6,500 medicinal plants, formulations, pharmacology, pharmaceutical principles and methods, therapeutics, pathogenesis, bio-regulation and other aspects of Ayurvedic science.

I saw several examples of this research. For example, there are studies that indicate that some foods may increase the longevity of life. Some popular studies have shown this with red wine. In Ayurveda, pomegranate is reputed to have the same properties, part of the branch of Ayurveda called Rasayana, the science of longevity.

A Ph.D. student used drosophila (fruit flies) to test that proposition. Some fruit flies were given red wine, others given pomegranate juice, others were a control group. By measuring how far up a container the fruit flies were able to climb, and for how long, there was a measure of vitality and strength. The student found that a supplementation of the fruit fly diet increased not only their

longevity but also their fertility, a result superior to that of red wine and of the control group.

An even more impressive experiment was described to me by Dr. Ramaswamy, a prominent neurologist who is Co-Chairman of the TDU Board of Trustees. One of the problems with doing research in medicine is how to test the results in the so-called real world. One can, of course, run experiments on lab rats or fruit flies, but they are different from humans. Testing theory on humans is particularly difficult as one can do great harm and there are stringent laboratory protocols on field tests. This is a difficult problem for all medical research.

The doctor said there were medicines that were supposed to help cure malaria that they wished to test the effectiveness of. However, the only way to do so would be to take a biopsy of a liver that had been injected with the medicine, and that is of course not possible on a live human who suffers from malaria!

What the team did was to use cutting edge stem cell technology, starting with skin cells from an arm. With stem cells, one can grow any organ of the human body, so they grew livers. They injected the livers with malaria, then injected one with the Ayurvedic medicine, and were able to measure the effectiveness of the ancient drug.

The visit was fascinating, and of course my thoughts turned to this trove of traditional knowledge. Darshan Shankar said they had an extensive database they had put together of medicines from the classic texts, together with photographs, annotations, and other materials. I asked if that database could possibly be put online? He said the Biodiversity Act would prohibit that. I did not understand and wanted to know more.

That evening, Her Royal Excellency Pramoda Devi Wadiyar, the Maharani of Mysore, hosted an event for a few dozen noted members of Bengaluru society and the doctors of TDU at the Bangalore Palace. After the presentations, we adjourned for a spectacular dinner of South Indian food, including dosas and pani puri, and for desert a watermelon kulfi served in a watermelon rind and an orange kulfi served in a hollowed-out orange. At dinner, I kept asking questions about Ayurvedic knowledge on the Internet and the implications of the biodiversity act on disseminating that information.

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Note on Code Swaraj

When I got back to California, I ordered a raft of books about traditional knowledge and biopiracy, starting of course with the groundbreaking works of Vandana Shiva. I sent notes to some Sanskrit scholars of ancient medicine who were active users of our Public Library of India and asked them what they thought. I read histories of Ayurvedic medicine and intellectual property books about patents on traditional knowledge.

Two things intrigued me. First, Darshan Shankar had sent me 13 CDs which they sell, with titles such as "Medicinal Plants in Homeopathy" and "Medicinal Plants of Kerala." Each CD had a simple database interface and consisted of pictures of plants with text, keywords, and other materials. These discs seemed like they could easily translate into a nice Internet interface.

The other thing that was puzzling me was a massive government effort known as the Traditional Knowledge Digital Library. The system had been built over the years by painstakingly transcribing over 150 books, and then codifying 297,183 traditional Ayurvedic and Unani formulations into a database. Eminent experts had selected the texts, and as best as I could tell this database represented the state of the art of codified traditional knowledge Ayurvedic formulations. There was a catch though: the database was not available to the public, only to patent examiners.

I have long grumbled about the U.S. Patent system. I've felt that the vast majority of "business method" and "software" patents do far more harm than good and are very rarely innovative or unique. I put the U.S. patent database on the Internet in 1994, and I've spent a lot of time looking at the procedures for issuing patents and have spoken to a large number of people who use patents in their daily work. In fact, when I first placed the patent database on the Internet, some of my most ardent users were employees of the U.S. Patent and Trademark Office, who had awful, antiquated search facilities at work and came home to use my system to do their research.

In addition to the overgrown thickets of business methods and software patents, there have been similar issues in medicine. In particular, the U.S. and European patent offices had issued a number of highly questionable patents that had inflamed passions in India, Africa, and many other locations with a deep history of using traditional knowledge in their day-to-day lives.

The most famous one was the patent on turmeric. Turmeric has long been known to have a number of healing properties, including healing of wounds. Two American researchers obtained a patent on the "use of turmeric powder

and its administration." India was justifiably outraged. After a great deal of effort led by Dr. R.A. Mashelkar, the Director-General of the Council of Scientific and Industrial Research, which runs the big national research laboratories in India, the patent was revoked.

Another patent was issued on basmati rice, which has been grown for millenia in Bengal. The patent was based on cross-breeding basmati rice with dwarf varieties of rice to create a sturdier plant. This is of course not an innovation as farmers all over India had been cross-breeding rice for just that purpose for centuries. Not only that, the patent included the word "Basmati" and could have conceivably led to causes of action against farmers using the word!

With the United Nations Convention on Biological Diversity, the international community recognized that patents that are based on traditional knowledge should not be the province of a few western corporate biopirates, appropriating knowledge that had been known in local communities for ages. The Convention encourages countries to put in place national laws, and India enacted the Biodiversity Act of 2002. One of the key principles of both the Convention and the Act is that western corporations should not profit exclusively off the knowledge of local communities, but should share the profits.

If indeed a patent is issued on traditional knowledge, I fully agree the profits should be shared. Additionally, if widespread harvesting of biological material occurs in a local area, based on an awareness from traditional sources of particular therapeutic effects, that patent should also have the profits shared with local communities. The Biodiversity Act enshrines those principles.

Here's my problem though. Most, if not all, of the patents that were awarded, from turmeric to basmati rice and many, many more, were (to use a technical term of art) totally bogus. They shouldn't have been issued. And even more such bad patents continue to be issued! The theory behind the Traditional Knowledge Digital Library is that patent examiners will use it to find such cases and prevent bad patents from issuing in the first place. The Digital Library has agreements in place with the U.S. and European Union patent offices, and I fully support the idea that their patent examiners should be using this database on a regular basis. This is a positive thing.

But, some people believe making the database available on a wider basis would somehow be bad because it would make this knowledge available for bad corporations to take advantage of. That same trepidation was behind the worries about putting TDU's database online. I don't understand that line of reasoning,

and it flies in the face of my experiences over three decades of putting public information online.

I sent notes to many people asking them what they thought of this. They agreed all with me that keeping the database secret was not helping prevent bad patents. I have come to the conclusion that keeping this information secret is hurting the propagation and diffusion of important public domain knowledge. I should note that I have never seen the database, and Sanskrit scholars caution that simply throwing formulations willy-nilly into a database without fully understanding the underlying texts will simply fulfill the old-age principle of garbage in, garbage out.

Nonetheless, the database exists, it is reputed to be of very high quality, and I believe making it more broadly available can contribute to the diffusion of useful knowledge. If the information is useful for beating back bad patents, making that information available to a broader group of patent-busters can only help that situation. If the data is not of the highest quality, allowing Sanskrit scholars to annotate it would be useful. And, of course, propagation of the Ayurvedic and Unani sciences would be immensely useful.

A more effective strategy than making a database just for examiners seems to be encouraging patent busters like Vandana Shiva. My colleague Beth Noveck, who headed Barack Obama's open government efforts in the White House (and is a good friend of Sam Pitroda as well), pioneered a system called "Peer To Patent," in which patent examiners worked with people on the net to try and find examples of prior art. Rather than simply make the database available to a few patent examiners, Peer To Patent leveraged the wisdom of crowds to achieve much better results.

I'm not sure I know the answers here, but my inclination is that the government's Traditional Knowledge Digital Library database should be available to the public. It consists of public domain knowledge, it was gathered at great expense by the government, and making it available would be good for traditional knowledge.

As a government enterprise, it would also seem that the Copyright Act, the Right to Information Act, and the Constitution all lean strongly towards disclosure. Perhaps I am in wrong in this inclination, but my hope is to begin this conversation in India in 2018, perhaps resulting in a formal petition to the government to make their database available to the public, not just on a portal, but for bulk download and reuse.

Scientific Knowledge and the Delhi University Copy Shop

The ninth area is scientific knowledge, by which I mean modern scholarly publishing in journals. Most of my effort in 2017 had been spent on barriers to access to scientific knowledge, specifically journal articles issued by U.S. employees or officers in the course of their official duties that were being illegally sequestered by publishers behind a paywall.

My original plan of action had been to do the analysis of that problem, bring my findings into the American Bar Association for either a yeah or neah vote, then send out notifications by certified mail to several dozen publishers and several dozen agencies. The letters would put the publishers on notice that they had a problem and ask for comments within 60 days.

The question in my mind had been, "what then?" When I send a letter about inappropriate assertions of copyright over public domain works, I don't ask for permission to publish. If a work is in fact in the public domain, I don't need permission. I also make it clear that I am in possession of a copy of the works in question, otherwise it is simply a theoretical issue. I ask for comments, though I rarely get comments back. The question at that point is should the article be posted?

I know from the experiences of Alexandra Elbakyan with Sci-Hub and Aaron Swartz with JSTOR how viciously brutal the publishers can be when they think their financial interests are being threatened. I don't believe the publishers would blink an eye even if I brought valid points to the table about works of government. They do what the standards people have done and come in with all their guns blazing. I'm definitely going to send out those notices to publishers because I believe they have misappropriated public property, but I've been looking for other paths less crooked that would lead more directly up to that shining library on the hill.

There was a similar situation in India, the famous Delhi University copy shop case, which may be that path. Delhi University had a small, privately-run copy shop on premises. Professors would come in with a list of journal articles, the shop would go to the library and get copies, then assemble course packs for students and sell them at a modest rate. The Rameshwari Photocopy Shop was sued by Oxford University Press, Cambridge University Press, and Taylor & Francis. The shop was raided by armed police. The owner told The Wire "It was shocking—I felt like a criminal."

Note on Code Swaraj

The case went to the High Court of Delhi in New Delhi. My friend Shamnad Basheer, one of the leading intellectual property scholars in India and a dedicated public worker, intervened on behalf of a society of students and academics.

The Copyright Act of India, like any copyright act, contains certain exceptions to copyright, areas where copyright simply does not apply. In the U.S., for example, works of the U.S. government are exempt from copyright. In both India and the U.S., one can copy a book to make it available to the blind without violating copyright, no matter what the status of the book, the result of an international treaty.

In India, another exception to copyright is when a work is copied in the course of a teacher instructing a student. Copyright does not apply when this occurs. The court said the course packs at Delhi University fell squarely within this exception to copyright. There was no copyright violation by the Rameshwari Photocopy Shop because the course packs had been made for that specific purpose, with the authorization of the university, in furtherance of the promotion of the diffusion of knowledge, the very purpose of copyright.

Copyright law did not apply. Case dismissed.

I've been mulling over the Delhi University case, and the decision of the court resonated deeply with me. What if I showed up on campus with my database of journal articles? I had in mind the equivalent of a taco truck that are ubiquitous here in the United States.

My idea is that a professor can furnish me a list of Digital Object Identifiers for journal articles. Then, when students come up to the window, I'd hand them a USB thumb drive with their course pack on it. Then I'd drive to the next university and do the same thing. One-on-one service of knowledge. Maybe we could serve snacks along with free USB drives. I have a wonderful collection of guacamole recipes that would be a huge hit in India.

"Isn't this directly on point?" I asked Shamnad. He agreed it seems to be exactly the same as the physical course packs, but of course one cannot ever tell how a court would interpret the specific facts and whether they would see the parallel between a USB drive and a paper course pack. But, we both agreed it was certainly on point.

The right to education is deeply enshrined not only in the Copyright Act, but is woven throughout the fundamental rights in the Constitution of India. For example, the right to practice the profession of your choice is a fundamental right, a right that is all about caste. But, it is about more than caste: you can't practice the profession of your choice if you can't learn about it. That was my argument with the technical standards and I would advance the same proposition for knowledge in general. An informed citizenry is at the core of a functioning democracy.

Instead of making scientific information available to everybody, I would be happy making that information available to 20 million Indian students, one at a time. It would make an important point: access to knowledge is not a binary proposition. Even if private property rights are in play, we cannot let these liens on the road to knowledge become an insurmountable obstacle when students attempt to further their education. Purposefully erecting barriers to education is immoral and here perhaps is an opportunity to do something to remove those barriers.

My hope is to use that data in India and provide access to Indian students. I am not sure if I will be brave enough to do this, or if universities in India will have the courage to allow me to come to campus. I do not know how greedy publishers will react. But, I believe the activity falls directly within the intended aims of the laws of India and if knowledge satyagraha is the only way to make that information available as it was meant to be, then so be it.

Democratizing Information

The tenth area is democratizing information. This is my umbrella category, the catch-all, but perhaps the most important. Much of my personal focus is on finding large databases accumulated with public funds, usually by the government, and making those available. That is a top-down enterprise, often focused at the level of the national government in India or the United States. I look for things that already exist and try to make them available.

But knowledge is not top-down. Knowledge begins with the people. I saw that very much when I met Bunker Roy on my 2016 trip. Sam had a lecture to give at the elite Mayo College, and early the next morning we shot over to Barefoot College to see his old friend Bunker before heading over to Central University of Rajasthan where Sam had to preside over the convocation as the Chancellor.

Note on Code Swaraj

Barefoot College is an amazing place. Bunker founded it in 1972, and it currently occupies a large campus in the middle of Rajasthan in near the village of Tilonia. Their signature initiative is solar lanterns. They bring in women from villages throughout the world and teach them how to build and maintain the solar lanterns. They learn to solder, how to read schematics, and how to train others. The women go home and are able to provide light for their villages, allowing students and adults to learn after dark. The solar power is used for a number of other tasks, such as charging cell phones.

In addition, Barefoot college has developed solar cookers, water reclamation projects, solar powered water desalination, trash disposal systems, and much more. They've worked with Apple on systems to allow children to get an education at night even if they spend the days working in the fields. Recent Ph.D. students come spend a year at Tilonia on post-docs to create even more innovative technology, then stay to deploy it into rural India and the world.

Knowledge springs from the ground up. One can focus on national governments, but to do so would be to ignore the countless small libraries, schools, the knowledge of elders in villages, the traditional lore kept in temples and Ayurvedic dispensaries, and many other storehouses of knowledge.

Democratizing information is a goal that also provides an opportunity for cross-fertilization between the U.S. and India. Farmers in both countries, for example, share common concerns about being able to access the software and repair their farm machinery or reuse their seeds. Both the U.S. and India have strong rural traditions and immense resources in small towns throughout the countryside. America-Bharat Bhai Bhai would be very powerful! The 3.5 million persons of Indian origin in America provide a strong base for building that partnership.

Sam Pitroda often speaks of democratizing information. This is an aspirational goal. It is not one single database that can be liberated. Democratizing information is a fundamental change in the production and consumption of knowledge. Universal access to knowledge is the promise of our times, and democratizing information would be the result. We must work towards this aspirational goal.

My Own Discovery of India

India and the United States are the two biggest democracies in the world, both with a rich heritage of fighting for freedom and the rule of law. It is perhaps presumptuous for a non-resident non-Indian such as myself to be giving so much

thought to knowledge in India, but I have been touched and pleased with how well my efforts have been received and wish to redouble those efforts.

It is my firm belief that if there is to be a global revolution in universal access to all knowledge, a decolonization of knowledge, then India is the place in the world best positioned to lead that revolution. I close with two anecdotes that illustrate why I believe this is so.

I was struck very much by a passage in Dr. Kaviraj Nagendranath Sengupta's 2-volume *The Ayurvedic System of Medicine,* a classic work in Bengali that was translated into English in 1901. Sengupta was the scion of a family of noted vaidyas and Sanskrit scholars who had long practiced in Kolkata. In his introduction he stated "knowledge in this country has never been bartered for money. The sale of knowledge has been condemned by the Hindu Scriptures."

That resonated with me. Indeed, on the cover of every one of the Indian Standards I posted, I had inscribed the words from Bhartrhari's Nitisatakam, "knowledge is a treasure which cannot be stolen." I had not expected to see that in an 1901 Ayurvedic textbook, but of course, I shouldn't have been surprised.

Sengupta-ji then surprised me again, for he went on to quote Lord Francis Bacon's classic text *The Advancement of Learning.* Bacon said that the practice of making knowledge should not be a "shop for profit, or sale" but that rather knowledge should be "a rich storehouse for the glory of the Creator, and the relief of man's estate."

Dr. Sengupta then dove deep into the classic texts, explaining how it worked in ancient times:

> *"He who has acquired proficiency in any branch of knowledge is bound to impart it to deserving pupils who wish to master it. Professors have not only to teach but even to feed and shelter their pupils as long as the latter stay with them. The rich and well-to-do of the land always do their best to support the learned who are engaged in teaching."*

One of course must take that principle with a grain of salt. As Shamnad Basheer reminded me, many Brahmins carefully protected access to religious texts, going so far as to punish any shudras who happened to hear them by filling their ears with molten lead. However, I do stand by the proposition that access to knowledge, despite the prohibitions of caste and other barriers, is a principle that runs deep in the history of India.

Note on Code Swaraj

In my reading on traditional knowledge, I came across one more anecdote that resonated with me. I was reading *Doctoring Traditions,* a fascinating book about the modernization of Ayurvedic practice in Bengal at the turn of the 19th century. In the early part of the last century, as western medical education became more widespread, many of the new class of daktaris were also Ayurvedic practitioners. They adopted modern tools, such as thermometers, microscopes, and stopwatches. New hospitals were being constructed. Pharmacies became bigger and more centralized.

In the middle of all this, new universities and colleges devoted to the teaching of medicine were being opened. When the new Astanga Ayurveda College was being dedicated with great fanfare, they invited Gandhi to lay the cornerstone.

Gandhi, for reasons of his own, accepted the invitation. He was welcomed as the chief guest with great fanfare and asked to make a few remarks. He then proceeded to trash the whole enterprise! You can read his speech of May 6, 1925 in Volume 27 of the Collected Works on page 42. Gandhi went on at length about how he felt big hospitals and fancy dispensaries were simply making things worse not better. He said that Ayurvedic physicians lacked sanity. They lacked humility. And that was just the beginning. He totally tore into the roots of the issue as only Gandhi-ji could.

After Gandhi left there was turmoil. The invitation committee wrote to him and asked him to retract his words. He refused. I sent the speech to Sam Pitroda, and he wrote me back saying he agreed with Gandhi on many points. Sam pointed out that what Gandhi-ji was really saying was that society should focus on prevention, and not on the growth of doctors, medicines, and hospitals as a business enterprise. Gandhi-ji also made the point that thinking you have all the answers is always a mistake and he felt that many of the modern practitioners felt they had all the answers in Ayurveda and lacked humility and faith in the local knowledge of ordinary people.

These two anecdotes illustrate to me why India is the place to start democratizing information and decolonizing. The idea that information must be made available is deeply engrained in Indian history and in the modern democratic framework of the Republic. High drug prices from the west, patents on traditional knowledge, and restricted access to the full scientific corpus are all symbols people recognize and understand.

People in India understand how badly a society can be hurt when knowledge becomes the private property of a few corporations. India has a long tradition of talking through social issues. That was what Gandhi-ji was doing when he spoke frankly at Ashtanga. That was what the Emperor Ashoka did when he encouraged tolerance to all religions and helped sponsor the Third Buddhist Council. If we are to have a frank conversation about universal access to knowledge, India seems the right place to have that discussion.

As I finish this note, it is Christmas day in California. I have booked a ticket back to India for February, and hope to make the new year one of knowledge, for myself and for others. I am most grateful to my friend Sam Pitroda for bringing me on this journey. Jai Hind. Code Swaraj.

The herbarium at TDU in Bengaluru.

The herbarium at TDU in Bengaluru.
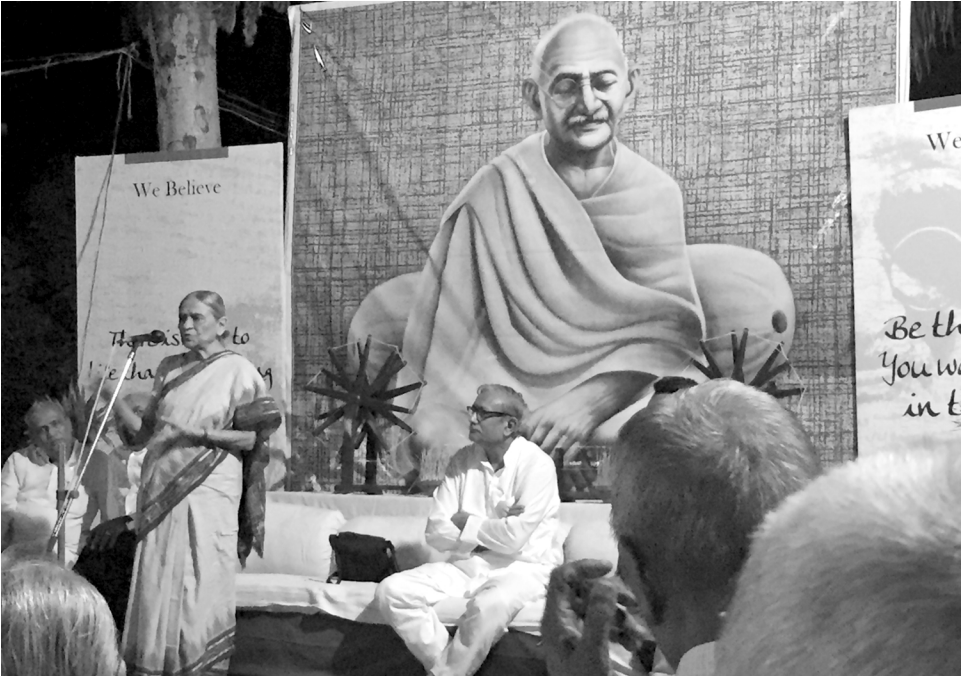

Gandhi's work area at Sabarmati Ashram.

Doctoral students poster on scientific testing of the principles of rasayana, a classic tenet of Ayurvedic medicine.

With HRE the Maharani of Mysore.

With Sam Pitroda at dinner. Standing in the middle is Darshan Shankar of TDU.

Ela Bhatt and Anamik Shah speak in Ahmedabad.

Convocational procession at Gujarat Vidyapith.

Books from the collection amassed by Lord Richard Attenborough.

Works of Nehru, Building Code of India, Liberation Documents Await Scanning.

At Barefoot College, accompanied by giant puppets.

At Barefoot College, women learning to build and maintain solar lanterns.

At Barefoot College, Bunker Roy explains the water reclamation system.

Gujarati meal at the home of Dinesh Trivedi.

Ananth Malathi of the firm Nishith Desai and Salman Khurshid in Salman's chambers.

Sam Pitroda talks to students at Gujarat Vidyapith.

With Nishith Desai at the India Gate in Mumbai.

With boxes of notifications being sent to standards bodies. Photo by Kirk Walter.
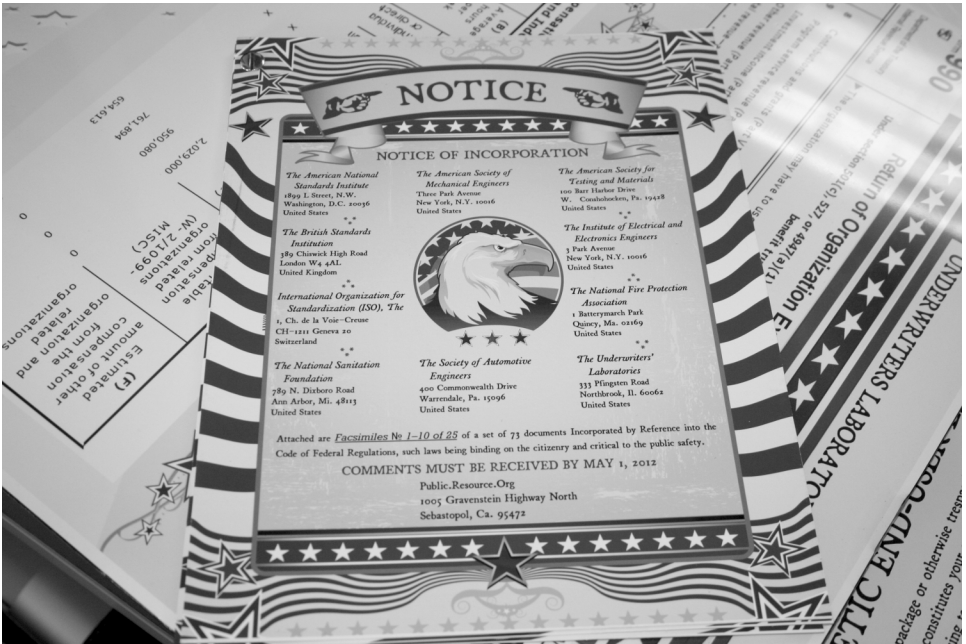
Notice of Incorporation laid out our belief that the law should become available to all.

Two disk arrays holding a substantial portion of all human knowledge in the form of 54.5 million journal articles. These disks have been since removed from the Public Resource offices and have been moved to another location.

Appendix: Tweets on Knowledge

Carl Malamud, Sebastopol, California, June 6, 2017

1/10 Public Resource has been conducting an intensive audit of the scholarly literature. We have focused on works of the U.S. government.

2/ Our audit has determined that 1,264,429 journal articles authored by federal employees or officers are potentially void of copyright.

3/ To further examine the subject, I have made a copy of a database known as scihub, which has 63+ million journal articles.

4/ The purpose of this copy is to create a transformational use, an extraction of all components of scihub that are in the public domain.

5/ Of the 1,264,429 government journal articles I have metadata for, I am now able to access 1,141,505 files (90.2%) for potential release.

6/ In addition, 2,031,359 of the articles in my possession are dated 1923 or earlier. These 2 categories represent 4.92% of scihub.

7/ Additional categories to examine include lapsed copyright registrations, open access that is not, and author-retained copyrights.

8/ Public Resource will make extracts of the Library of Alexandra available shortly, will present the issues to publishers and governments.

9/ Alexandra Elbakyan created scihub and has made a profound and brave contribution to access to knowledge. We should all stand with her.

10/ Universal access to all knowledge is the great unachieved promise of our generation. With the Internet, this dream can become real.
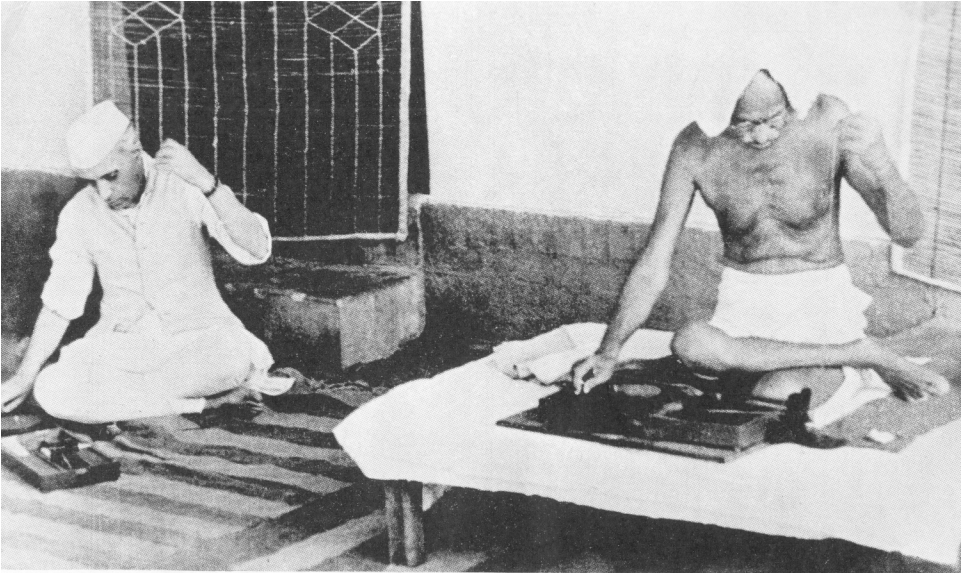
CWMG, vol. 85 (1946), Frontispiece, With Jawaharlal Nehru in Bhangi Colony, New Delhi.

CWMG, vol. 48 (1931–1932), p. 80, With Textile Workers in Lancashire.

CWMG, vol. 90 (1947–1948), Frontispiece.

Statue by Nuala Creed of Aaron Swartz at the Internet Archive. Photo by BZ Petroff.

Aaron speaking for freedom of speech on the Internet. Photo by Daniel J. Sieradski.

Appendix: When Is Transparency Useful?

Aaron Swartz, June, 2009.

Transparency is a slippery word; the kind of word that, like reform, sounds good and so ends up getting attached to any random political thing that someone wants to promote. But just as it's silly to talk about whether "reform" is useful (it depends on the reform), talking about transparency in general won't get us very far. Everything from holding public hearings to requiring police to videotape interrogations can be called "transparency"—there's not much that's useful to say about such a large category.

In general, you should be skeptical whenever someone tries to sell you on something like "reform" or "transparency." In general, you should be skeptical. But in particular, reactionary political movements have long had a history of cloaking themselves in nice words. Take the Good Government (goo-goo) movement early in the twentieth century. Funded by prominent major foundations, it claimed that it was going to clean up the corruption and political machines that were hindering city democracy. Instead, the reforms ended up choking democracy itself, a response to the left-wing candidates who were starting to get elected.

The goo-goo reformers moved elections to off-years. They claimed this was to keep city politics distinct from national politics, but the real effect was just to reduce turnout. They stopped paying politicians a salary. This was supposed to reduce corruption, but it just made sure that only the wealthy could run for office. They made the elections nonpartisan. Supposedly this was because city elections were about local issues, not national politics, but the effect was to increase the power of name recognition and make it harder for voters to tell which candidate was on their side. And they replaced mayors with unelected city managers, so winning elections was no longer enough to effect change.[1]

Of course, the modern transparency movement is very different from the Good Government movement of old. But the story illustrates that we should be wary of kind nonprofits promising to help. I want to focus on one particular strain of transparency thinking and show how it can go awry. It starts with something that's hard to disagree with.

Sharing Documents with the Public

Modern society is made of bureaucracies and modern bureaucracies run on paper: memos, reports, forms, filings. Sharing these internal documents with the public seems obviously good, and indeed, much good has come out of publishing these documents, whether it's the National Security Archive, whose Freedom of Information Act (FOIA) requests have revealed decades of government wrongdoing around the globe, or the indefatigable Carl Malamud and his scanning, which has put terabytes of useful government documents, from laws to movies, online for everyone to access freely.

I suspect few people would put "publishing government documents on the Web" high on their list of political priorities, but it's a fairly cheap project (just throw piles of stuff into scanners) and doesn't seem to have much downside. The biggest concern—privacy —seems mostly taken care of. In the United States, FOIA and the Privacy Act (PA) provide fairly clear guidelines for how to ensure disclosure while protecting people's privacy.

Perhaps even more useful than putting government documents online would be providing access to corporate and nonprofit records. A lot of political action takes place outside the formal government, and thus outside the scope of the existing FOIA laws. But such things seem totally off the radar of most transparency activists; instead, giant corporations that receive billions of dollars from the government are kept impenetrably secret.

Generating Databases for the Public

Many policy questions are a battle of competing interests—drivers don't want cars that roll over and kill them when they make a turn, but car companies want to keep selling such cars. If you're a member of Congress, choosing between them is difficult. On the one hand are your constituents, who vote for you. But on the other hand are big corporations, which fund your reelection campaigns. You really can't afford to offend either one too badly.

So, there's a tendency for Congress to try a compromise. That's what happened with, for example, the Transportation Recall Enhancement, Accountability, and Documentation (TREAD) Act. Instead of requiring safer cars, Congress simply required car companies to report how likely their cars were to roll over. Transparency wins again!

Appendix: When Is Transparency Useful?

Or, for a more famous example: after Watergate, people were upset about politicians receiving millions of dollars from large corporations. But, on the other hand, corporations seem to like paying off politicians. So instead of banning the practice, Congress simply required that politicians keep track of everyone who gives them money and file a report on it for public inspection.

I find such practices ridiculous. When you create a regulatory agency, you put together a group of people whose job is to solve some problem. They're given the power to investigate who's breaking the law and the authority to punish them. Transparency, on the other hand, simply shifts the work from the government to the average citizen, who has neither the time nor the ability to investigate these questions in any detail, let alone do anything about it. It's a farce: a way for Congress to look like it has done something on some pressing issue without actually endangering its corporate sponsors.

Interpreting Databases for the Public

Here's where the technologists step in. "Something is too hard for people?" they hear. "We know how to fix that." So they download a copy of the database and pretty it up for public consumption—generating summary statistics, putting nice pictures around it, and giving it a snazzy search feature and some visualizations. Now inquiring citizens can find out who's funding their politicians and how dangerous their cars are just by going online.

The wonks love this. Still stinging from recent bouts of deregulation and antigovernment zealotry, many are now skeptical about government. "We can't trust the regulators," they say. "We need to be able to investigate the data for ourselves." Technology seems to provide the perfect solution. Just put it all online—people can go through the data while trusting no one.

There's just one problem: if you can't trust the regulators, what makes you think you can trust the data?

The problem with generating databases isn't that they're too hard to read; it's the lack of investigation and enforcement power, and websites do nothing to help with that. Since no one's in charge of verifying them, most of the things reported in transparency databases are simply lies. Sometimes they're blatant lies, like how some factories keep two sets of books on workplace injuries: one accurate one, reporting every injury, and one to show the government, reporting just 10% of them.[2] But they can easily be subtler: forms are misfiled or filled with typos, or the malfeasance is changed in such a way that it no longer

appears on the form. Making these databases easier to read results only in easier-to-read lies.

Three examples:

- Congress's operations are supposedly open to the public, but if you visit the House floor (or if you follow what they're up to on one of these transparency sites) you find that they appear to spend all their time naming post offices. All the real work is passed using emergency provisions and is tucked into subsections of innocuous bills. (The bank bailouts were put in the Paul Wellstone Mental Health Act.) Matt Taibbi's *The Great Derangement* (Spiegel & Grau) tells the story.

- Many of these sites tell you who your elected official is, but what impact does your elected official really have? For 40 years, people in New York thought they were governed by their elected officials—their city council, their mayor, their governor. But as Robert Caro revealed in The Power Broker (Vintage), they were all wrong. Power in New York was controlled by one man, a man who had consistently lost every time he'd tried to run for office, a man nobody thought of as being in charge at all: Parks Commissioner Robert Moses.

- Plenty of sites on the Internet will tell you who your representative receives money from, but disclosed contributions are just the tip of the iceberg. As Ken Silverstein points out in his series of pieces for Harper's (some of which he covers in his book Turkmeniscam [Random House]), being a member of Congress provides for endless ways to get perks and cash while hiding where it comes from.

Fans of transparency try to skirt around this. "OK," they say, "but surely some of the data will be accurate. And even if it isn't, won't we learn something from how people lie?" Perhaps that's true, although it's hard to think of any good examples. (In fact, it's hard to think of any good examples of transparency work accomplishing anything, except perhaps for more transparency.) But everything has a cost.

Hundreds of millions of dollars have been spent funding transparency projects around the globe. That money doesn't come from the sky. The question isn't whether some transparency is better than none; it's whether transparency is really the best way to spend these resources, whether they would have a bigger impact if spent someplace else.

Appendix: When Is Transparency Useful?

I tend to think they would. All this money has been spent with the goal of getting a straight answer, not of doing anything about it. Without enforcement power, the most readable database in the world won't accomplish much—even if it's perfectly accurate. So people go online and see that all cars are dangerous and that all politicians are corrupt. What are they supposed to do then?

Sure, perhaps they can make small changes—this politician gets slightly less oil money than that one, so I'll vote for her (on the other hand, maybe she's just a better liar and gets her oil money funneled through PACs or foundations or lobbyists)—but unlike the government, they can't solve the bigger issue: a bunch of people reading a website can't force car companies to make a safe car. You've done nothing to solve the real problem; you've only made it seem more hopeless: all politicians are corrupt, all cars are dangerous. What can you do?

An Alternative

What's ironic is that the Internet does provide something you can do. It has made it vastly easier, easier than ever before, to form groups with people and work together on common tasks. And it's through people coming together—not websites analyzing data —that real political progress can be made.

So far we've seen baby steps—people copying what they see elsewhere and trying to apply it to politics. Wikis seem to work well, so you build a political wiki. Everyone loves social networks, so you build a political social network. But these tools worked in their original setting because they were trying to solve particular problems, not because they're magic. To make progress in politics, we need to think best about how to solve its problems, not simply copy technologies that have worked in other fields.

Data analysis can be part of it, but it's part of a bigger picture. Imagine a team of people coming together to tackle some issue they care about—food safety, say. You can have technologists poring through safety records, investigative reporters making phone calls and sneaking into buildings, lawyers subpoenaing documents and filing lawsuits, political organizers building support for the project and coordinating volunteers, members of Congress pushing for hearings on your issues and passing laws to address the problems you uncover, and, of course, bloggers and writers to tell your stories as they unfold.

Imagine it: an investigative strike team, taking on an issue, uncovering the truth, and pushing for reform. They'd use technology, of course, but also politics and the law. At best, a transparency law gets you one more database you can

look at. But a lawsuit (or congressional investigation)? You get to subpoena all the databases, as well as the source records behind them, then interview people under oath about what it all means. You get to ask for what you need, instead of trying to predict what you may someday want.

This is where data analysis can be really useful. Not in providing definitive answers over the Web to random surfers, but in finding anomalies and patterns and questions that can be seized upon and investigated by others. Not in building finished products, but by engaging in a process of discovery.

But this can be done only when members of this investigative strike team work in association with others. They would do what it takes to accomplish their goals, not be hamstrung by arbitrary divisions between "technology" and "journalism" and "politics."

Right now, technologists insist that they're building neutral platforms for anyone to find data on any issue. Journalists insist that they're objective observers of the facts. And political types assume they already know the answers and don't need to investigate further questions. They're each in their own silo, unable to see the bigger picture.

I certainly was. I care passionately about these issues—I don't want politicians to be corrupt; I don't want cars to kill people—and as a technologist I'd love to be able to solve them. That's why I got swept up in the promise of transparency. It seemed like just by doing the things I knew how to do best—write code, sift through databases—I could change the world.

But it just doesn't work. Putting databases online isn't a silver bullet, as nice as the word transparency may sound. But it was easy to delude myself. All I had to do was keep putting things online and someone somewhere would find a use for them. After all, that's what technologists do, right? The World Wide Web wasn't designed for publishing the news—it was designed as a neutral platform that could support anything from scientific publications to pornography.

Politics doesn't work like that. Perhaps at some point putting things on the front page of the New York Times guaranteed that they would be fixed, but that day is long past. The pipeline of leak to investigation to revelation to report to reform has broken down. Technologists can't depend on journalists to use their stuff; journalists can't depend on political activists to fix the problems they uncover. Change doesn't come from thousands of people, all going their separate

ways. Change requires bringing people together to work on a common goal. That's hard for technologists to do by themselves.

But if they do take that as their goal, they can apply all their talent and ingenuity to the problem. They can measure their success by the number of lives that have been improved by the changes they fought for, rather than the number of people who have visited their website. They can learn which technologies actually make a difference and which ones are merely indulgences. And they can iterate, improve, and scale.

Transparency can be a powerful thing, but not in isolation. So, let's stop passing the buck by saying our job is just to get the data out there and it's other people's job to figure out how to use it. Let's decide that our job is to fight for good in the world. I'd love to see all these amazing resources go to work on that.
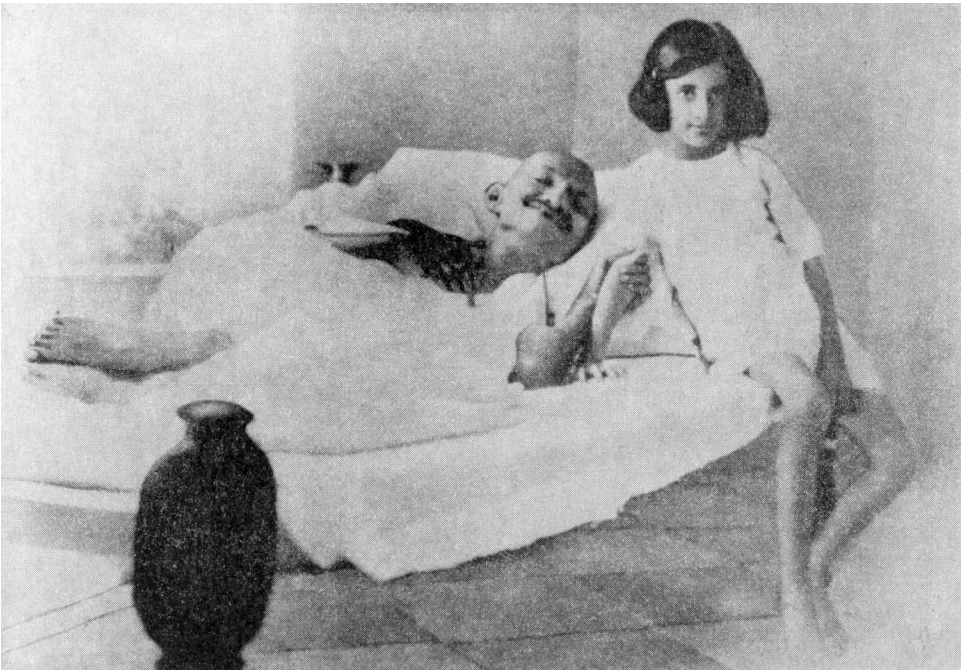
Notes

1. For more, see http://sociology.ucsc.edu/whorulesamerica/power/local.html.

2. Fast Food Nation, Eric Schlosser, Houghton Mifflin, 2001.

CWMG, vol. 74 (1941), Frontispiece, Spinning with the Danush Takli.
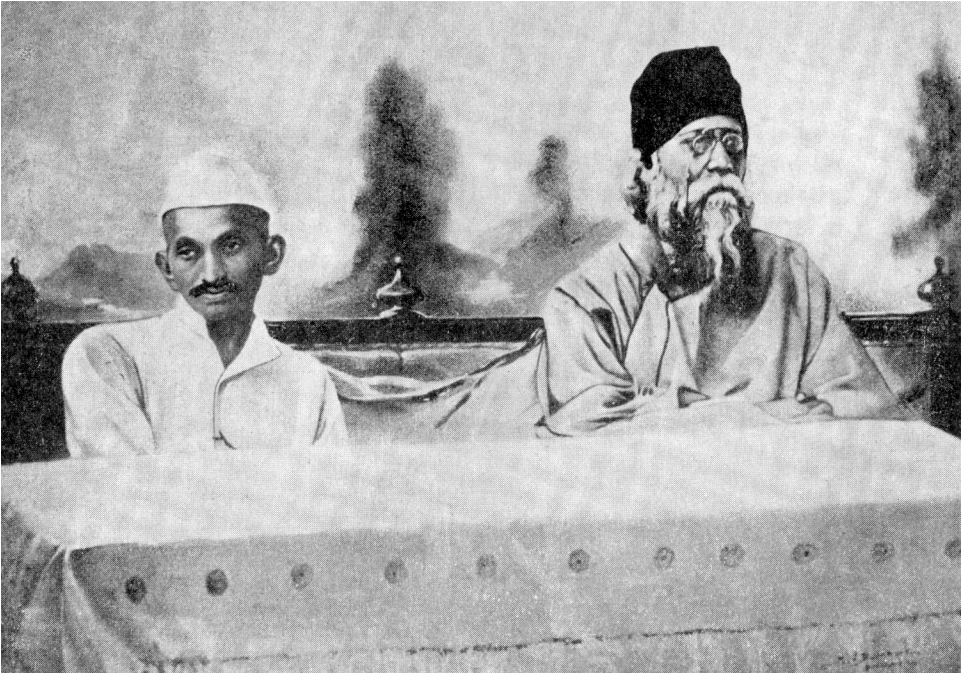
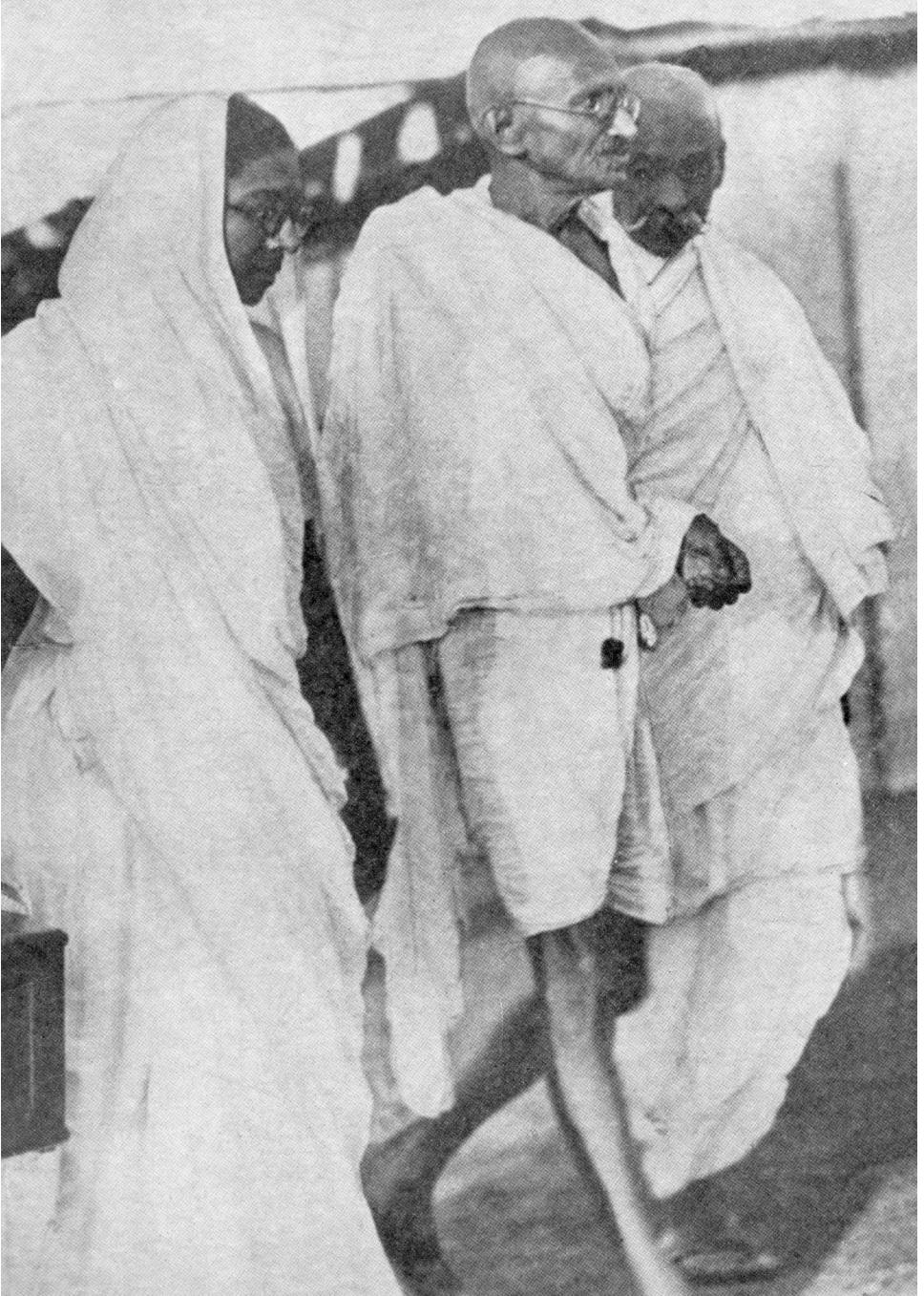*CWMG, vol. 17 (1920), p. 169, Gandhi-ji with Tagore at Ahmedabad in April, 1920.*

CWMG, vol. 25 (1924–1925), p. 177, Gandhi During the Fast, With Indira.

CWMG, vol. 86 (1947), p. 225, In Noakhali, After a Prayer.

CWMG, vol. 89 (1947), Frontispiece.

CWMG, vol. 59 (1934), Frontispiece, With Sardar Patel and Manibehn Patel at the Congress Session in Bombay.

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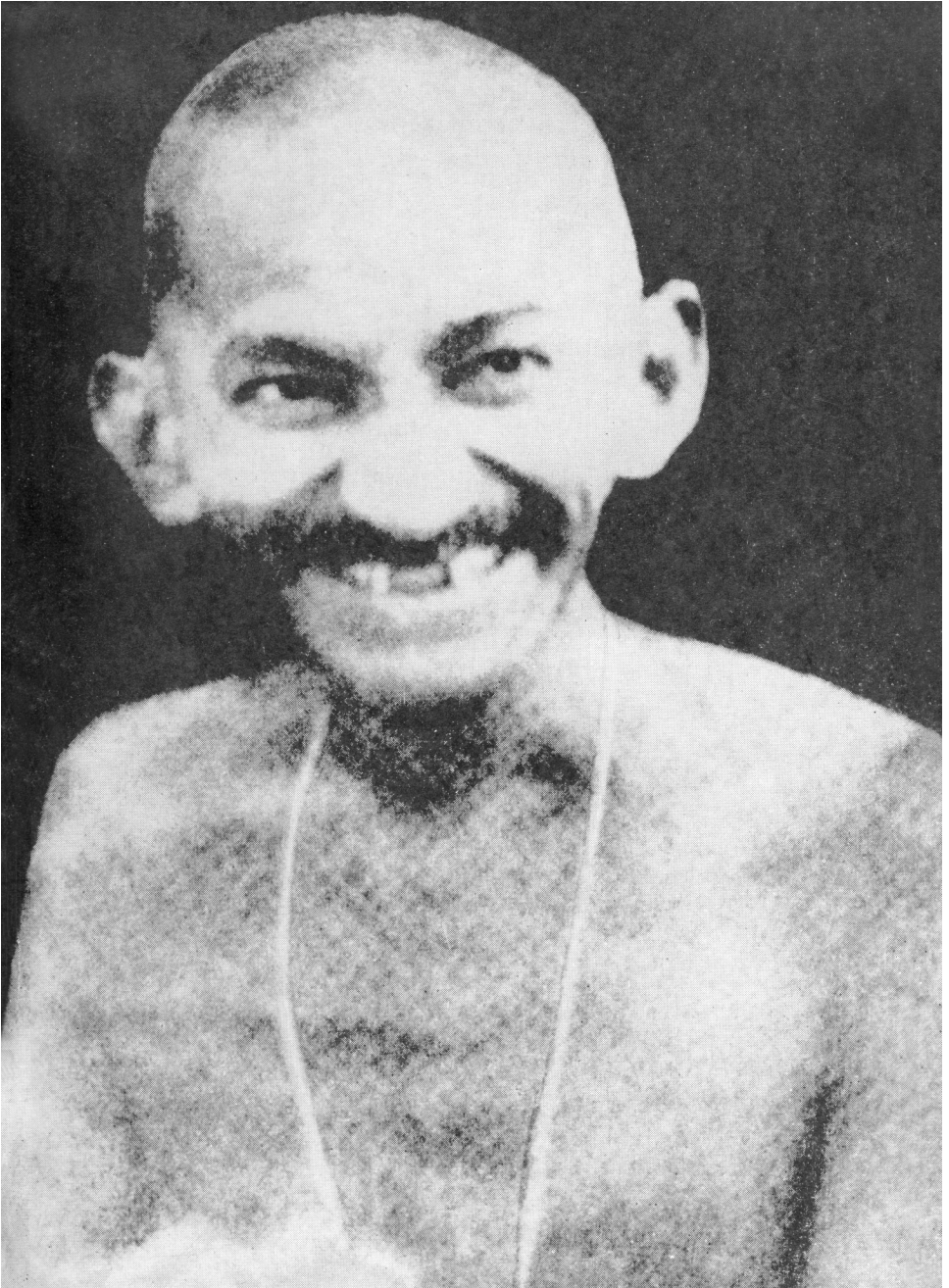
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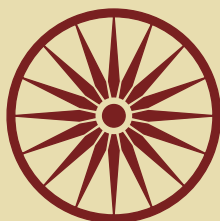@carlmalamud
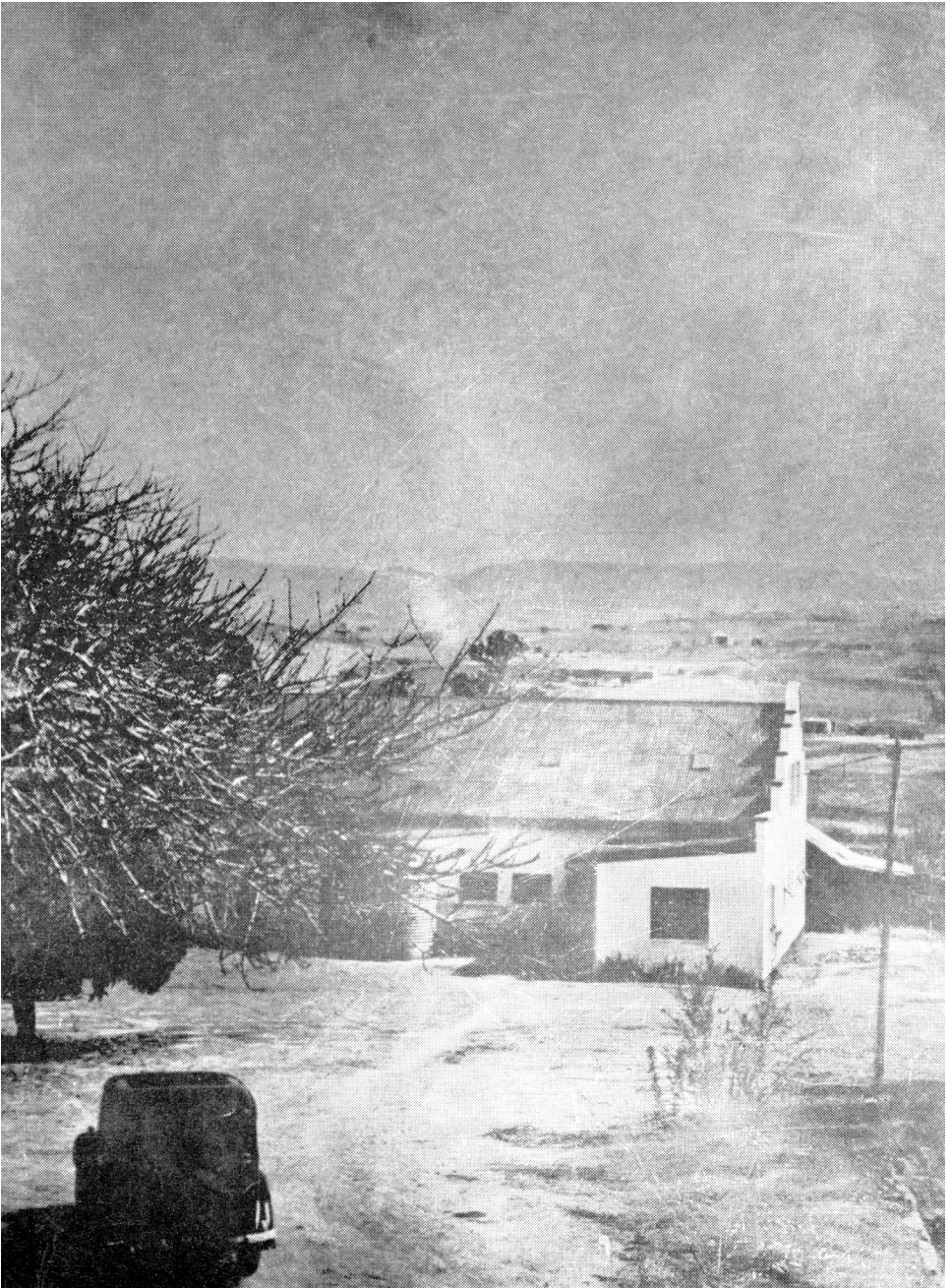
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